Pathways to Innovation – how can we do it better?

A Submission to the House of Representatives Standing Committee on Science and Innovation

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Introduction

This submission is made on behalf of the members of Knowledge Commercialisation Australasia (KCA). They represent the organisational units that provide outreach services for the majority of Australia's universities and some from the public research sector and service providers.

The submission focuses upon technological innovations and the pathways to commercialisation from public sector R&D suppliers, and suggests improvements that could be made to these activities for the benefit of Australia.

It clearly articulates the case for greater recognition and support for the outreach activities of these organisations; the so-called third stream funding as introduced by the UK government after the recent Lambert Review of the university system there.

This submission provides an overview of the role of Knowledge Commercialisation Australasia which exists to share best practice in the marketing of knowledge products and services from Australian universities and research organisations.

It also includes details of the major biennial public sector innovation marketing initiative coordinated by KCA; "The Commercialisation Forum and Fair of Ideas". This is a flagship project featuring the capabilities and services of this sector to industry and investors in a knowledge trade fair setting.

The submission identifies several specific areas where the government could beneficially direct further support in order to encourage the public sector research suppliers to extend their outreach objectives in the context of regional economic and community development.

Definition of Commercialisation

KCA believes that , in recent times in Australia, there has been an over-emphasis in applying the term "commercialisation" or "research commercialisation" to include only licensing and start-up companies. This narrow definition focussing on aspects that are easy to measure is an incomplete picture. In our view, a more complete definition of commercialisation must encompass the following sub-categories :

- Industry-sponsored research contracts
- External consultancies
- Joint Venture arrangements
- IP licensing and option agreements
- Formation of spin-out companies
- Other technology-transfer activities

There are multiple pathways and processes that universities and public research organisations utilize to transfer knowledge which becomes integrated into new innovations. These pathways have been articulated most recently by Dr John Howard in his report to DEST; "The emerging business of knowledge transfer creating value from intellectual products and services." April 2005.

The performance of KCA members organisations is best measured through the expanding revenue base they generate in terms of collaborative R&D, consultancies and continuing education and the

wealth creation from technology licensing and the formation of new start-up companies. The report by Dr John Howard referred to above contains detailed performance data on individual institutions.

Knowledge Commercialisation Australasia

Networking and enhancing knowledge commercialisation practice

Knowledge Commercialisation Australasia (KCA) is the peak industry body representing organisations and professionals engaged in public sector knowledge commercialisation.

KCA and its antecedent organisation the Australian Tertiary Institutions Commercial Companies Association (ATTICA) have a 25-year history. Its members develop and share in-depth business management experience for value adding to public sector knowledge and intellectual property.

The core focus and differentiation of KCA is based upon the benefits it offers professional managers within organisations involved directly in the knowledge commercialisation process in universities and the public research sector.

Purpose: Advancing knowledge commercialisation practice achieving greater returns from public sector research investment.

Mission: To build skills, capabilities and effective management processes in organisations engaged in knowledge commercialisation and technology marketing.

Objectives:

- Organise professional development and knowledge commercialisation events.
- Develop strategic alliances and affiliations with organisations active in the knowledge commercialisation value chain.
- Facilitate explicit and tacit knowledge networking amongst members.
- Develop international linkages with like organisations and their members.
- Cooperate with government policy makers in stimulating innovation, entrepreneurship and commercialisation.

KCA promotes awareness and understanding of research and knowledge commercialisation in the academic, business and finance sectors.

The most recent National Survey of research commercialisation years 2001 and 2002 by DEST (Oct 2004) provides some more detailed evidence of commercialisation outcomes (patent productivity, licensing, start ups and equity). We have already noted that these measures paint a narrow view of "research commercialisation" outcomes. Nevertheless, these gathered data are summarised in the table below:

	2000	2001	2002
Patent activity (encompassing patents and plants breeder rights)			
Inventions disclosed	527	622	559
Total Australian and United States patent applications filed	813	622	587
Total patents issued worldwide	493	261	269
Licensing activity (encompassing licences, option and assignments)			
Licences executed	404	374	435
Licenses yielding income	476	585	585
Licence income			
Adjusted gross income from licences ($'000)[b]	95,191	64,738	63,716
Start-up companies			
Start-up companies formed	46	61	53
% of companies with their headquarters in Australia	89%	95%	81%
Companies operational at the end of the year	86	110	116
% of companies in which equity was held at the end o the year	78%	72%	80%
Equity holdings			
Value of equity holdings ($'000)	104,762	124,235	108,770

a) Initially, some survey respondents included patent applications filed worldwide, rather than only Australia and the United States. The overall figures for patent applications filed in 2001 and 2002 dropped significantly when corrected figures were supplied. If this error was also made in the Year 2000 survey, then this may explain the drop between 2000 and 2001 in the number of patent applications filed.

b) In the Year 2000, a single transaction comprised $50 million of reported licence income.

c) CSIRO data relate to start-up companies formed in the survey year and still operational at year-end. CSIRO has spun-off more than 80 start-ups since the early 90's and a survey in 1996 indicated that survival rates for CSIRO start-ups is relatively high, at around 70 per cent.

The new start up ventures created during this period from this sector are listed at **Appendix 1.**

The additional community benefit that can be generated from harvesting the licensing and new start-up venture opportunities from across the public research sector has been estimated to be worth over $20B in annual export earnings within 5 to 10 years (PMSEIC 2001).

KCA members convert research ideas and technologies generated by universities and public sector agencies into wealth, exports and jobs. KCA members create value by managing the knowledge commercialisation processes on behalf of their owners.

There is no single or unique model for a knowledge commercialisation office representing a research supplier organisation. Each may perform roles as knowledge commercialisation facilitators in a number of areas:

- Educating and creating awareness of IP processes and requirements amongst researchers
- Assisting researchers with their IP and patent protection

- Assessing market potential
- Identifying potential industry partners and collaborators
- Negotiating license agreements
- Forming start-up companies
- Matching investors with opportunities
- Early stage investment managers

Experience in Australia, the United States and in Europe has demonstrated that several key requirements must be met in order for a university or public research institution to responsibly and actively manage the knowledge commercialisation function. These include:

- A complete management team, covering Intellectual Property, marketing, contracting and financial management.
- Commercialisation management is resource-intensive and requires sufficient start up capital.
- Commercialisation teams must bring together both the inventor and a potential investor or technology adopter as early as possible in the development cycle.
- Sources of early stage seed/risk money need to be identified early to support technical and market feasibility studies, and the development of prototypes.
- Appropriate disclosure processes must be in place to facilitate the identification and screening of new technologies and to protect the institutions and the inventor's Intellectual Property rights.
- Fast cycle and stage-gate project technology management techniques are necessary for screening and evaluation of technologies.
- Internal and external bureaucratic and regulatory barriers, and disincentives to commercialising technology must be minimised.
- Regular interaction between the commercialisation team, the potential client community, financial organisation and the researchers is necessary.

KCA Case Studies

A number of commercialisation case study examples have been assembled from members as part of this submission to add weight to the vital role that the university technology transfer and commercialisation teams serve in converting knowledge to innovation in conjunction with industry and investors.

These are presented at **Appendix 2.**

KCA Commercialisation Forum and Fair of Ideas (CFFI)

In order to stimulate increased interaction with industry and investors KCA organised the first Australian Knowledge Trade Fair in Sydney in 2003 in conjunction with DEST as part of the Backing Australia's Ability initiative.

KCA in conjunction with the Australian Institute for Commercialisation is currently planning the second Event based upon that success. KCA believes that this should be an annual event with continued government support as a key culture change initiative. Generally, government is not sufficiently patient to sustain a great concept until it can stand on its own.

The plans for the next CFFI are summarised at **Appendix 3** along with some reported outcomes of CFFI-2003.

KCA Views on Improving the " Commercialisation Environment"

As it is the leading organisation in knowledge commercialisation, KCA has an advocacy position in relation to improving the environment within which its members operate. Accordingly KCA strongly supports the following:

- Development of programs that enable universities and research organisations to build basic knowledge commercialisation competencies thereby reducing the risks associated with poor practices.
- Support for regional initiatives by universities that aim to exploit their talent attraction and support the location and growth of technology companies. In particular, attaining "critical mass" by smaller regional universities partnering with larger more established university commercialisation arms. eg.. this has recently occurred between the university of Wollongong and Uniquest (UQ)
- Financial support to KCA to conduct the biennial Commercialisation Forum and Fair of Ideas (CFFI) as a critical contribution to raising community awareness and commercialisation deal flow.
- Unified public research sector IP management guidelines that provide clarity to industry and place clear responsibilities and accountabilities for the management and commercial exploitation of R&D outcomes.
- Support for regional technology business incubators linked to universities, research organisations and business.
- Initiation of research commercialisation awareness raising programs to assist culture change across the public sector.
- Existing government R&D programs to include full cost recovery and financial support towards the significant research commercialisation cost associated with managing research outcomes.
- Introduction of a new early stage commercialisation fund program to be administered by KCA members in their host institutions. This will enable leveraged investment to attract professional investors
- Consideration of a hosted on-line network linking all of the KCA core members across Australia as the backbone for connecting commercialisation nodes.
- Stronger alignment of national research organisations to strengthen collaboration and associated commercialisation.
- Recognition of the fact that technology transfer and commercialisation requires a long-term investment and institutional commitment.
- Development of initiatives that focus upon Alumni engagement in commercialisation.

Background to the KCA Proposal

KCA believes that there is a "gap" that needs to be addressed by government to tangibly support university commercialisation activities.

DEST provides universities with considerable support whether directly or through related agencies in both research and teaching supported funding. However, the lack of specific funding for commercialisation means that for many institutions they must make the decision whether to engage in commercialisation and to divert funding from the core mission of research and teaching.

KCA also acknowledges that DITR supports a number of commercialisation efforts through schemes such as "Commercial Ready" *via* AusIndustry but to qualify for such schemes, applicants need to be an independent company (university 'controlled entities' are ineligible). In fact for public sector research commercialisation, this requirement can encourage company formation prematurely leading to poor outcomes.

A significant market failure exists in the commercialisation gap at the knowledge commercialisation and transfer level and needs tangible support from the Commonwealth similar to that which operates in the UK.

KCA's views have recently been supported in the report for DEST prepared by Karingal consultants.

"The effectiveness of incentives to academic researchers to commercialise their research outcomes", April 2005. (www.dest.gov.au/highered/commercialsaition/incentives htm).

It endorses most of KCA's proposals and in particular suggests the consideration of 3-5% of research expenditure to universities being directed to the support of research commercialisation activities.

This would help lift knowledge transfer performance across all areas including industry contract research through to licensing arrangements through to the formation of university spin-off companies and various permutations of these.

As practitioners in this field KCA members know that successful commercialisation of university intellectual property requires critical mass in terms of the following:

1 *Length of time Commercial Office Established*

- OECD studies indicate this is one of the best "correlates of success". Why? The right people are hired over time, there is both an accepted on-campus focal point for researchers and also an entry-point for industry and investors into the university.
- Most offices established over 10 years have also started to realise licensing revenues which "breed more success". It should be appreciated that most licensing deals take 7-8 years to generate incomes. A corollary of this point is that research commercialisation is an inherently slow process when it comes to financial returns.
- In addition, the big revenue licensing deals are far from common and based on US experience occur, depending on the university, once every 12 to 15 years.

2 *Commercial Acumen of Commercialisation staff*

- The staff carrying out the Research Commercialisation at universities need broad skills but above all need commercial acumen, good project management and negotiation skills. We need to strive to attract and hire the best individuals for these challenging roles.
- On the job training and networking is also very important in these roles and KCA is committed to providing professional development to this dedicated group of professionals.

3 *Research and Commercialisation culture On-Campus*

- This is an area where the technology transfer office needs to work directly with researchers in providing training and also with the university executive to implement changes in rewarding commercialisation efforts of university staff.
- This aspect needs to be embraced by the various institutions and not by consultants on "flying visits".

4 *Generation of quality IP with commercial Potential*

- The so-called "deal flow" is crucial to success. Without intellectual property having high potential i.e. high interest to a "buyer", the chances of any success are greatly reduced. We are always striving to increase our "invention disclosures" as we know how important deal-flow is to successful outcomes.

5 *Early Stage Proof-of-Concept Funding*

- It is generally true that university generated research with commercial potential needs very early seed funding to take it to "proof-of-concept" or prototype or to market scope the opportunity. This is particularly true within our sector as university inventions are at the start of the innovation cycle.
- Some universities do provide such funding to support their commercialisation efforts.

6 *Long-term focus by the government and University sector*

- Improvements in research commercialisation have started and will continue but can be accelerated by the government and universities working closely together.
- The commercialisation process is a slow one for a number of reasons and the partnership between government and universities must similarly develop long-term goals and strategies.

KCA Proposal to the Committee

KCA suggests that the Commonwealth Government acknowledges the shortcomings noted above, and that specific funding needs to be set aside for university commercialisation efforts. In their recent report, Karingal Consultants suggest that this figure should be in the **range of 3-5% of university research expenditures.** (www.dest.gov.au/highered/commercialsaition/incentives htm).

KCA strongly agrees and suggests these funds could be accessed *via* specific programs. Some areas include:

Fund University Commercialisation Entities

Consider direct support or rebate to the establishment and/or running of a commercialisation technology transfer office.

- Minimum requirements for qualification might be that the university has committed to at least a dedicated resource of 2 full time equivalent (FTE) for three (3) years.
- For an established office, a separate formula could be developed.

Provide Support for IP Protection

Consider a Patent Rebate Scheme

- Up to 50% of patent costs can be rebated on bona-fide patent costs based on the previous years expenditures.

Fund IP Training

Provide Assistance with on-campus IP commercialisation Training

- Provide dollar-for-dollar matching of university expenditures of on-campus training courses for staff and post-graduate students in research commercialisation

Support University-Based Pre-Seed Schemes

Provide Matching Funds for Bona-fide University Pre-seed Funds

- Support university expenditures dollar for dollar for on-campus commercialisation proof-of-concept funding. University must have a *bona-fide* fund setup with clear rules and procedures to qualify .

Offer for a Committee Briefing by KCA

The KCA Executive is more than happy to present its views to this committee at a convenient time and location.

Appendix 1

Start-up companies formed from the university and public research sector in 2001 and 2002

Start-up companies formed in 2001

	KCA member	Start-up companies
Universities		
Central Queensland University		Hortical
Charles Darwin University	✓	In Motion Technologies
Griffith University	✓	Antenova Limited
La Trobe University		Scribe Associates
Queensland University of Technology	✓	Farmacule Bioindustries Pty Ltd
Royal Melbourne Institute of Technology		Inquirion Pty Ltd
Swinburne University of Technology	✓	3DCD Technology Pty Ltd
		OpalTree Systems Pty Ltd
		Sportsbet21 Pty Ltd
The Flinders University of south Australia		MediMolecular
The University of Adelaide	✓	Australian Centre for Plant Functional Genomics Pty Ltd
The University of Melbourne	✓	Chirogen Pty Ltd
		Cyptopharma Pty Ltd
		Lignotek Pty Ltd
The University of Newcastle	✓	Virotarg
The University of Queensland	✓	Bireme Pty Ltd
		CBIO Limited
		Coridon Pty Ltd
		Dentil
		Fultech Pty Ltd
		Genedimmer Pty Ltd
		Kalthera Pty Ltd
		Mimetica Pty Ltd
		Myalgen Pty Ltd
		Nanomics
		Protagonist Pty Ltd
		Vacquel Pty Ltd
The University of Sydney	✓	Accumine Pty Ltd
		Evisense Pty Ltd
		Glycemic Index Ltd
		Mathstatica Pty Ltd
		Medsaic Pty Ltd
		Monoclonal Partnerships Inc
		Nuflora International Pty Ltd
		Ucorn Six Pty Ltd
		Ucorn Two Pty Ltd
The University of Western Australia	✓	Sanctuary Systems
University of New England		Genetic solutions Pty Ltd
University of south Australia	✓	Knowledge south Pty Ltd
University of Technology, Sydney	✓	Avolution Pty Ltd
		Avolution Pty Ltd
		PacMob Pty Ltd
Victoria University of Technology	✓	TradeData International Pty Ltd
		Transol Pty Ltd
Medical Research Institutes		
Austin Research Institute		Arthron Pty Ltd
		Cancer Vac Pty Ltd
Centenary Institute of Cancer Medicine & Cell Biology		Centec Ltd
Garvan Institute of Medical Research		G2 Therapies Ltd
Murdoch children's Research Institute		Antisense Therapeutics Ltd

	KCA member	Start-up companies
		SciBAC Pty Ltd
		Technology Commercialisation Entity Pty Ltd
Walter and Eliza Hall Institute of Medical Research		Genera Biosystems Pty Ltd
CSIRO		
		ATM Casting Technologies Pty Ltd
		Ausmodel Pty Ltd
		Barley Plus Pty Ltd
		Entocosm Pty Ltd
		Evogenix Pty Ltd
		Ingredia Pty Ltd
		Join Technology Pty Ltd
		Plantic Technologies Ltd
		Polymer Surface Technology Pty Ltd
		ValueMetrics Australia
Cooperative Research Centres		
Australian Photonics		Cactus Fibre Pty Ltd
		Advanced Polymerik Pty Ltd
		Ceram Polymerik Pty Ltd
Sustainable Tourism		Decipher Technologies
		Earthcheck
		Green Globe Asia Pacific

Start-up companies formed in 2002

	KCA member	Start-up companies
Universities		
Curtin University of Technology	✓	Cool Energy Ltd
Griffith University	✓	GLYKOZ Pty Ltd
James Cook University	✓	Global Cardiac Solutions Pty Ltd
		Toxitech Pty Ltd
La Trobe University		Cyclagen Pty Ltd
		JustSys Pty Ltd
		Phytogene Pty Ltd
Macquarie University	✓	BioTrack Australia Pty Ltd
		Fluotrotechnics Pty Ltd
		Microbiogen Pty Ltd
		Pacific Gem
Murdoch University	✓	Paragen Pty Ltd
Swinburne University of Technology	✓	Genos Pty Ltd
		MiniFAB Pty Ltd
The Australian National University	✓	Liotek Pty Ltd
		Phenomix corp
		Ringwood Superbrasives Pty Ltd
The University of Adelaide	✓	Australian Centre for Plant Functional Genomics Pty Ltd
The University of Melbourne	✓	Calbre Biotechnology Pty Ltd
		Hatchtech Pty Ltd
		Pargenex Pty Ltd
The University of New South Wales	✓	Cystem H Pty Ltd
The University of Queensland	✓	Adipogen Pty Ltd
		Antepodi Technologies Pty Ltd
		Combinomics Pty ltd
		Cyclagen Pty Ltd
		Diabox Pty Ltd
		Hoempatch Pty Ltd
		Nephrogenix Pty Ltd
		Q-Pharm Pty Ltd
		QRX Pharma Pty Ltd
The University of Sydney	✓	Matrix Gene Pty Ltd

	KCA member	Start-up companies
		Nucleous Pty Ltd
		Ucorn Seven Pty Ltd
The University of Western Australia	✓	Alzhyme Pty Ltd
		Paradigm Diagnostics
		Vitrostone
University of South Australia	✓	Iterative Connections Pty Ltd
University of Technology, Sydney	✓	AlMedics Pty Ltd
Victoria University of Technology	✓	3DCD Technologies Pty Ltd
Medical Research Institutes		
Austin Research Institute		Oncomab Pty Ltd
		Pan Vax Pty Ltd
		Xeno Trans Ltd
Macfarlane Burnet Institute for Medical Research		Hepitope Pty Ltd
Murdoch Children's Research Institute		Ausgenics Pty Ltd
CSIRO		
Cooperative Research Centres		
Bioproducts		Ingredia Pty Ltd
Cast Metals Manufacturing		Castcoat Pty Ltd
Clean Power from Lignite		Laser Analysis Technologies Pty Ltd
Distributed systems Technology Centre (DSTC) Pty Ltd		Wedgetail Communication Pty Ltd
MicroTechnology		MNT Innovations Pty Ltd
Other Publicly Funded Research Agencies		
Australian Institute of Marine Science		Toxitech Pty Ltd

Appendix 2

INNOVATION & COMMERCIALISATION CASE STUDIES

FROM

KCA MEMBERS

CONTRIBUTING INSTITUTIONS:

- **UNIVERSITY OF ADELAIDE / ADELAIDE RESEARCH AND INNOVATION**
- **ANU/ ANU INNOVATIONS**
- **EDITH COWAN UNIVERSITY**
- **FLINDERS UNIVERSITY / FLINDERS TECHNOLOGIES**
- **GRIFFITH UNIVERSITY**
- **ITEK / UNIVERSITY OF SOUTH AUSTRALIA**
- **MACQUARIE UNIVERSITY**
- **MONASH UNIVERSITY / MONASH COMMERCIAL**
- **RMIT**
- **SWINBURNE UNIVERSITY OF TECHNOLOGY**
- **UNIVERSITY OF WESTERN AUSTRALIA/ OFFICE OF INDUSTRY AND INNOVATION**
- **UNIVERSITY OF QUEENSLAND / UNIQUEST**
- **UNISEARCH/UNSW**

Case Study : "Receptor Mimic Technology"

Institution : The University of Adelaide (UA)

Technology / Product / Service

Receptor Mimic Technology relates to the use of recombinant microorganisms to control diseases causing diarrhoea, such as cholera and travellers diarrhoea, in both humans and animals.

Certain toxins secreted by bacteria gain entry to host cells by binding to oligosaccharides attached to proteins or lipids on the surface of the cells. Researchers at UA, Professor James Paton, and Drs Adrienne Paton and Renato Morona have discovered an invention, Receptor Mimic Technology that provides a method for preventing the binding of bacterial toxins to these oligosaccharides and therefore their entry into host cells. The method uses a bacterium that has been engineered to express the relevant oligosaccharide on the bacterial surface. The bacterium is introduced into the gut, either dead or alive, and adsorbs free toxin, thereby sequestering it in the gut lumen and preventing the bacterial toxin or bacteria itself from binding to the cells lining the gut, and from being absorbed into the underlying tissues and the blood.

The technology has already been proven in animal models, and microorganisms that have been designed to control diseases in both humans and animals are ready for immediate clinical trials. Initial indications are that the microorganisms will most easily be delivered through food or drink as both a probiotic, thereby preventing the establishment and expression of pathogenic diarrheal diseases, and also as an antibiotic drug used to shorten the course and severity of diarrheal disease by reducing accessible toxins. Receptor Mimic Technology can also be used as a diagnostic platform.

Commercialisation Strategy

In accordance with the continuing positive results from the research program, the commercialisation strategy was to license the Receptor Mimic Technology into a commercial vehicle (BioMimic) established to commercialise the technology. This vehicle was established with a partner company, and acts to leverage ongoing investor involvement by demonstrating the prospective value through a sub-license for the commercialisation of the porcine application.
The intent of the strategy is to generate investment for the development of human applications. The commercial structure has been developed to capture the upside potential of the technology and does this by converting the potential long-term royalty stream to an equity exit. The structure also ensures professional management and access to markets. The human and animal applications were separated to encourage focus on the separate development of the human and animal applications. It is our experience that if both human and animal applications are kept within the same company, one or the other is developed at a significantly slower rate or not at all. Results from any trial carried out by BioMimic or the partner company are to be shared between the companies.
ARI has taken an equity interest with anti-dilution provisions in the form of company shares in BioMimic. All milestone and royalty returns from the commercialisation of the animal applications will be returned to BioMimic from the partner company.

Outcomes and Current Status

As of April 2005, the company BioMimic has been established and porcine applications have been licensed to Imugene Ltd. Proof of concept trials are progressing in pigs. It is anticipated that a product for the porcine market will be available in the US towards the end of 2009.

Contact details for further information :

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Case Study : "Embryo Culture Medium for Improved Pregnancy Success Rates Through IVF"

Institution : The University of Adelaide (UA)

Technology / Product / Service

The technology is an improvement in embryo culture medium formulation, containing the growth factor GMCSF. This improved media formulation increased the proportion of embryos that develop to the blastocyst stages in vitro. Blastocyst transfer has been proposed to revolutionise IVF protocols to improve pregnancy success rates with single embryo transfer. Indeed some clinics report success rates as high as 70% for blastocyst transfer compared to the average success rate for day 2/3 embryos of 20 – 35%.

Babies produced by IVF are associated with several adverse post-natal outcomes, such as growth impairment and birth defects. GMCSF is a molecule that naturally conceived embryos are normally exposed to in the maternal environment during very early development. Studies conducted by our inventors in mice have demonstrated improved post natal outcomes in embryos created by IVF exposed to GMCSF compared with controls.

It is expected that this technology will allow routine culture of embryos to blastocyst stage for ART procedures so as to improve the level of pregnancies resulting from single embryo transfer to a level that is on par with multiple embryo transfer, improve the cost-efficiency of IVF treatment and improve post natal outcomes of IVF babies.

Commercialisation Strategy

The application of this technology and the filed patent application, was limited to a method and medium formulation for embryo culture. Following a thorough market and commercial analysis by UA's commercial development company, Adelaide research & Innovation Pty Ltd (ARI), ARI concluded that the best model for commercialisation of this technology was licensing. A licensing model was developed where a company or companies already servicing the assisted reproduction market would be granted either a worldwide or territorial licence to undertake further research and development of the technology, including the undertaking of a clinical trial and passage through the regulatory approval process and to market a media formulation that contained GMCSF. In return, the University would receive upfront fees and payments associated with increased value milestones, and a royalty of the net price for all products sold that included the technology.

Outcomes and Current Status

A worldwide exclusive licence was executed with Danish media company, Medicult, in November 2004. Medicult will undertake all future development of the technology including toxicity studies for safety, a clinical trial for efficacy to measures pregnancy success rates and a longitudinal study aimed to measure long terms benefits to IVF babies. The financial terms of the licence include an upfront payment, milestone payments associated with successful completion of clinical trial and achievement of regulatory approval in the US and Europe, sales milestone payments, and an increasing royalty rate associated with sales milestones. It is anticipated that the clinical trial will be completed in 2008 and first product launched in the European and US markets in 2009.

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Case Study : Phenomix Corporation Inc

Institution : The Australian National University (ANU)

Technology / Product / Service

The Medical Genome Centre, John Curtin School of Medical Research, ANU pioneered the development of ways to understand gene functions in mice through genome-wide mutagenesis, a powerful approach previously limited to simpler organisms like fruitflies and roundworms. The Centre developed methods, infrastructure, data-tracking software and expertise to successfully produce, curate and screen large libraries of mice with subtle changes in individual genes and to map and identify the mutant genes in a large number of novel strains.

Commercialisation Strategy

In collaboration with the Genomics Institute of the Novartis Research Foundation, California, USA and the Baylor College of Medicine, Texas, USA ANU drove the formation of a new entity, Phenomix Corporation Inc, to use the detailed physiological data generated, and the capability to generate such data, by the Medical Genome Centre and the other institutions for drug discovery and development. By generating the physiological data using the ANU approach in a mammalian system, Phenomix creates biological insight that allows earlier and better informed decisions across the discovery and development process.

ANU Innovation (formerly Anutech Pty Ltd) played a central role in early planning for company formation and negotiated arrangements between ANU and Phenomix Corp to enable effective transfer of the technology to the company.

Outcomes and Current Status

Phenomix Corp has headquarters in San Diego USA and a research base in Canberra, Australia (Phenomix Australia). In 2002 Phenomix Corp raised US$32 million in venture capital funding (from both US and Australian investors). The company currently has several anti-inflammatory drugs in clinical development and Phenomix Australia has signed a significant collaborative deal with biotech giant Genentech.

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Case Study : New Glaucoma Diagnostics

Institution : The Australian National University (ANU)

Technology / Product / Service

Researchers from the Research School of Biological Science, ANU have developed novel technology to assess patients for glaucoma and other neurodegenerative diseases. The diagnostic approach is based on the measurement of transmissions along the optic nerve, which are disrupted in glaucoma and other neurodegenerative diseases. The assay is non-invasive and does not rely on patient responses unlike current testing systems.

Commercialisation Strategy

After considering several commercialisation strategies it was determined that local company Seeing Machines Pty Ltd would be an exciting and capable partner for development of this new diagnostic tool. The collaboration combines a specialised extension of Seeing Machines unique vision sensing technology with ANU's unique visual stimuli and diagnostic capability to a novel device for rapid and sensitive detection of glaucoma. ANU has entered into a sponsored research agreement with Seeing Machines and will see a royalty stream from successful device sales.

ANU Innovation (formerly Anutech Pty Ltd) played a central role IP management and protection and negotiated arrangements between ANU and Seeing Machines to enable effective transfer of the technology to the company.

Outcomes and Current Status

Seeing Machines was awarded a $250,000 BIF grant to develop the diagnostic device in November 2004.

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Case Study : "Friendly Schools and Families"

Institution : Edith Cowan University (ECU)

Technology / Product / Service

ECU's Child Health Promotion Research Unit (CHPRU) has been working on a comprehensive bullying intervention program for primary schools. This six-year study is one of the few evidenced-based programs available and involves students, staff and parents. The success of the intervention program in pilot schools has led to a growing demand for the program.

In 2004 a decision was made to offer the program to schools on a commercial basis.

Commercialisation Strategy

ECU's Commercialisation Manager has worked closely with the CHPRU development team to devise and implement the commercialisation strategy. Prior to moving to ECU the initial research was undertaken at Curtin University and an IP management strategy was developed which provides Curtin University with a share of net proceeds.

CHPRU have excellent links at the "system" level of education at both the regional and state level. These linkages were used as a route to marketing, promotion and training activities. Indeed, regional educational offices have proved to be most effective in implementing the program into a large number of schools.

A supporting network of state-based accredited facilitators is being developed to ensure regional support during implementation and ongoing training.

ECU has agreed that the majority of net income (70%) is reinvested with CHPRU to encourage further development of the Friendly Schools and Families related programs.

Outcomes and Current Status

Friendly Schools and Families became available to schools towards the end of January 2005. As of April 2005, close to 300 schools have implemented the program and partaken in associated training. As yet a formal launch has not taken place!

Predicted income for 2005 is $1.1million; figures for April confirm predictions with over $300,000 being received from sales and training.

Currently, South Australia, WA and Victoria have confirmed their intention to implement the program state-wide. Negotiations with NSW and Queensland are advanced. UK and US markets will be approached in late 2005.

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Case Study : "Fireball"

Institution : Edith Cowan University (ECU)

Technology / Product / Service

The National Institute of Forensic Scientists (NIFS) is a body representing all Australian police forces.
In 1999, NIFS and ECU agreed to initiate a project to develop a ballistic recognition system. Following close collaboration a system known as "Fireball" was developed and offered to all Australian police forces. Three state forces use Fireball as their primary ballistic recognition system.

The system was developed to meet the needs of active ballisticians and to minimal maintenance requirements.

Commercialisation Strategy

ECU's Commercialisation Manager has worked closely with NIFS to formulate an IP agreement and to ensure that Australian Police forces receive royalty free upgrades.
Commercialisation will be targeted at the international arena. A licence agreement is being developed to permit a recognised security products distribution company to market Fireball. ECU will be provided with a percentage of sales. Furthermore, the distribution company has committed to raise significant capital to permit the development of the next generation "scene-of-crime" system. As a result, ECU will attract significant research income to produce a unique and much needed "next generation" system.

Outcomes and Current Status

Fireball is functioning successfully in three Australian state police forces.

An IP agreement has been reached between NIFS and ECU.

A Licence agreement is being finalised with a distributor to permit the sale of Fireball internationally.

Significant capital raising is under way to permit the development of a unique, cost effective automated system which has worldwide potential. Such a system will require a collaborative research effort between universities, industry and research organisations.

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Case Study : Your Amigo: Enterprise Search Engine Solutions – We find the invisible

Institution : Flinders Technologies Pty Ltd/Flinders University

Technology/Product/Services

YourAmigo is a software company specialising in information search and retrieval products. The core technology is based on concepts originally developed at Flinders University. The company has attracted a strong private investor base through experienced management, exceptional technology and performance track record.

YourAmigo's search products represent a paradigm shift, out-performing traditional spider-based search technologies. Based on unique technology and architecture, our search products are able to provide organisations with a vastly improved ability to seamlessly search their intranets, extranets and web sites. This allows our customers to find valuable and relevant information, including dynamic pages generated from multiple databases, which no other search engine can find, and the ability to keep up-to-date with changing page content.

YourAmigo has also established core technology for searching the Invisible Web, which is the huge part of the Internet which is currently invisible to search engines.

Commercialisation Strategy

Flinders Technologies, the commercial arm of Flinders University financed and managed the early emergence of YourAmigo. This included securing COMET and AusIndustry R&D Start support prior to sourcing early stage capital for the establishment of the company.

YourAmigo is now planning an IPO later in 2005.

In May 2001, YourAmigo signed a three-year Industry Alliance agreement with Australia's Defence Science and Technology Organisation (DSTO), the largest defence research establishment in the southern hemisphere.

Outcomes and current Status

Your Amigo has released its first product, YourAmigo Enterprise Search (for intranets and web sites), which is significantly improving the productivity and efficiency for organisations and their customers.

It now has many large corporate and public sector customers throughout the world.

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Case Study: "Antenova Limited"

Institution: Griffith University (GU)

Technology/ Product/ Service

Antenova Limited has developed a range of unique handset antennas that operate at 800/900MHz, 1800/1900MHz and 2100MHz (UMTS). All of Antenova's handset antennas can be further augmented to support GPS, 802.11a and 802.11b/g/Bluetooth. Using patented HDA™ technology, Antenova's handset antennas offer the highest in use efficiency in the smallest volume possible. Because the near field of Antenova's antennas is closely held, the antennas are much less sensitive to the nearby environment. This means that once an Antenova antenna is selected, the design of the handset can be modified without redesigning the antenna, resulting in significant cost savings not possible with traditional antenna technologies. The formation of Antenova was based on RF-Antenna technology developed jointly at Griffith University (Dr Steven O'Keefe) and the University of Sheffield (Dr Simon Kingsley) in 1998. Antenova developed its first two products: a three-sector directional antenna for a location monitoring unit and a high performance multi-element antenna for a pico base station, in 2001.

Commercialisation Strategy

In the early stages of securing the intellectual property, Griffith University's Office for Commercialisation (formerly the Research and Business Liaison Office), worked closely with the inventors to develop a commercialisation strategy. It was determined that the entrepreneurial and investor interest in the technology was based in the United Kingdom and the company was formed in 1999 and based in Cambridge. Griffith and Sheffield University's assigned their interests in the technology to Antenova in 2000 in exchange for equity. Griffith University maintains its links with Antenova's research and development laboratories located at Cambridge by the involvement of Dr O'Keefe, who is a representative on Antenova's Technical Steering Committee.

Outcomes and Current Status

Antenova has been extremely successful in commercialising its RF-antenna products signing a licensing deal for tens of millions of units with its long term world-class partner Galtronics in October 2004. Galtronics will have the rights to use one of Antenova's High Dielectric Antenna (HDA) designs exclusively for its customers in cellular handsets and cellular PC card devices. The development of Antenova has been funded by three tranches of capital totalling some $42.5 million to date, which was provided by a consortium of venture capital firms.

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Case Study: "Glykoz Pty Ltd"

Institution: Griffith University (GU)

Technology / Product / Service

Glykoz Pty Ltd is developing a broad portfolio of innovative carbohydrate based compound templates. Each compound template gives rise to a family of compounds from which lead compounds are identified, optimised and developed for the treatment of specific disease states. Glykoz has exclusive worldwide rights to these compound families, which have been identified through a rational drug design methodology. Patents have been filed which protect the structure, synthesis and application of compound families.

Compounds currently under development by Glykoz show activity against a large number of bacteria including drug-resistant varieties. The chemistry used to create these compounds is novel and the structure of the Glykoz compounds does not resemble existing antibiotics. The base chemistry provides opportunities to create compounds with novel shapes and modes of action that will be applicable to a number of different clinical situations.

Current compounds under development will be licensed to partners looking to provide next generation treatments for infectious diseases caused by bacteria including tuberculosis, streptococcus, enterococcus and staphylococcus and those caused by multi-drug resistant bacterial strains.

Commercialisation Strategy

Glykoz was formed in February 2002 by co-founders: Professors Mark von Itzstein (Griffith University), Ross Coppel (Monash University) and Andrew Loch (CEO). The technologies, which form the basis of the company were developed at Griffith and Monash Universities and both Griffith University's Office for Commercialisation and Monash Commercial led the transfer of their respective technologies. In August 2002, Griffith University licensed novel technology to Glykoz and separately Griffith and Monash Universities jointly owned technology was licensed at the same time.

Outcomes and Current Status

In December 2003, Glykoz secured $2.9M funding from Queensland BioCapital Fund a leading Australian biotechnology focused venture capital firm. In May 2004, the company received a further $1.8M from the Commonwealth Government R&D START Grant to complete pre-clinical development of its first drug candidate. The company has a strategic R&D relationship with Griffith University and has been granted a first right of refusal for anti-infectives.

Compounds currently under development by Glykoz exhibit activity against a large number of bacteria including many common, clinically important, drug-resistant varieties. The chemistry used to create these compounds is novel and the structures of the Glykoz compounds do not resemble existing antibiotics. The base chemistry provides opportunities to create compounds with novel shapes and modes of action that will be applicable to a number of different clinical situations.

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Case Study : Cohda Wireless

Institution : ITEK Pty Ltd (University of South Australia)

Technology / Product / Service

Cohda Wireless delivers low cost/high bandwidth broadband solutions to moving vehicles using patented advanced signal processing techniques developed by the University of South Australia's Institute for Telecommunications Research (ITR).

Cohda Wireless products can be tailored to fit either small-scale private networks or larger Wireless Wide Area Networks, and are suitable for public and private use.

It is anticipated that public transport and safety agencies will be the largest markets to benefit from Cohda's low cost/high bandwith solution. The combined global value of these markets is estimated at $US 2b.

Commercialisation Strategy

In conjunction with the Institute for Telecommunications Research, ITEK has grown the advanced signal processing technique from an idea into a patented, commercially viable product in less than two years.

ITEK funded the initial development of the intellectual property and managed its protection. ITEK was also responsible for raising the funds required to transform the technology into the stand-alone spin-out company it is today.

According to one of ITR's founding creators, ITEK has played a fundamental role in refining the commercial potential of the technology and developing its go-to-market strategies, enabling Cohda Wireless to deliver a new class of performance specifications for mobile data communications.

Outcomes and Current Status

At present, Cohda is fast-tracking the development of its prototype Digital Wireless Node to be ready for pilot trials with Australian and US public transport and public safety agencies by mid 2005. Funding of $2m has been sourced though a combination of an AusIndustry Research and Development Start Grant, and pre-seed funding from SciVentures Investments and ITEK.

For more information, please contact:

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Case Study : PROTEAN IEF cell

Institution: Macquarie University

Technology / Product / Service:

The PROTEAN IEF cell is a key component of the ProteomeWorks system, a line of products designed to meet the needs of high-throughput labs as well as occasional users.

The IEF Cell together with the Mass Spectrometer are the cornerstones of the modern field of Proteomics. It facilitates the initial locating of the protean samples on the background material. This particular instrument (plus associated consumables) was developed by staff at the Australian Proteomics Analysis Facility (APAF) at Macquarie University.

Commercialisation Strategy:

Commercialisation attempts had stalled on this technology by late 1999. Macquarie Research Limited commercialisation staff became involved in early 2000 and within 6 months had negotiated and finalised a licence deal with a major, US life sciences company, Bio-Rad. Laboratories. Bio-Rad developed the instrumentation and through their world wide distribution network launched the PROTEAN IEF cell as a dedicated instrument for running IPG strips. The instrument became a standard in proteomic labs around the world.

Outcomes and Current Status:

The PROTEAN IEF cell and associated technology is now widely used around the world in the life sciences and more specifically in the field of proteomics. To date Macquarie University has generated in excess of $3m in royalties and the Bio-Rad licence continues to be a significant source of Royalties for the University and the academic inventors.

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Case Study : LAMS International Pty Ltd

Institution: Macquarie University

Technology / Product / Service:

LAMS ("Learning Activity Management System") is an Australian invention that has become the world's leading software for creating and running digital lesson plans. Its unique drag-and-drop interface transforms lesson planning into a simple, visual experience (see below).

The system is being used in all forms of education: K-12 schools, vocational training, higher education, adult/community learning and corporate training. The greatest interest in LAMS to date has been in K-12 schools and universities, followed by vocational training.

Commercialisation Strategy:

The LAMS software is being released as open source to generate maximum interest, use and to stimulate a third party developer environment. The open source strategy creates a barrier to entry for competitors, enables the take-up of the software application on a broad scale by key education service providers and allows the software to become the educational standard in learning management systems.

Macquarie University has created the commercial company, LAMS International Pty Ltd to commercialise the software, providing software support, training and implementation services on commercial terms.

Outcomes and Current Status:

There are hundreds of organizations from over 20 countries that are trialling LAMS, and LAMS articles have been published on the Web in six languages.

As LAMS software has no cost, LAMS relies on contributions from key users. The LAMS Foundation Ltd seeks support from governments, charities and others around the world. Apart from significant assistance from Macquarie University and James Dalziel, some examples of support to date (with cash contributions in parentheses) are listed below:

- ✓ UK Department for Education and Skills (DfES - $120,000) together with the UK Specialist Schools Trust ($70,000) – supporting over 40 UK schools
- ✓ New Zealand Ministry of Education ($205,000 – committed for early 2005) – supporting over 30 NZ schools, together with polytechnics and universities
- ✓ UK Joint Information Systems Committee ("JISC") ($70,000) supporting 15 Further Education and 16 Higher Education institutions in the UK
- ✓ Oxford University ($20,000)
- ✓ Cambridge University ($20,000)
- ✓ Australian National University & University of Canberra ($20,000)
- ✓ Nanyang Technological University, Singapore ($20,000)
- ✓ University of Sussex ($20,000)
- ✓ National Library of New Zealand ($20,000)
- ✓ Tasmanian Department of Education ($20,000)

The official global launch of LAMS as freely available open source software was held on 13 April 2005 attended by Government officials from Australia, New Zealand and the UK, educational leaders, pedagogy experts, and LAMS supporters. Following the release, LAMS has been actively

promoted across the world for use in all education sectors both in the developed and developing world. To date there have been over 1000 downloads of the LAMS software.

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Monash University Commercialisation Successes: Establishment of new businesses

Acrux Ltd

Acrux's core business is the development and commercialisation of its transdermal drug delivery technology originally discovered at Monash University. It was established in 1998 to invest in specialty pharmaceutical businesses developing products that are intended to enable the safe and effective delivery of a broad range of drugs through the skin. Acrux listed on the ASX in September 2004. www.acrux.com.au

Cerylid Biosciences Ltd (which merged with KinaciaPty Ltd)

Cerylid is an Australian bioscience company based in Melbourne, Victoria, that was founded in 2000. The company recently acquired Kinacia Pty Ltd, a Monash Commercial start-up and an Australian biotechnology company specialising in therapeutics based on inhibition of kinase targets. www.cerylid.com

Cortical Pty Ltd

Cortical Pty Ltd develops small-molecule solutions to therapeutic targets in inflammation. Founded in 2003, it is a Melbourne based drug discovery and development company that has been commercialised through venture capital funding, federal government R&D grants, and a strategic partnership with Genzyme – a major international biotechnology company based in the US. The company appointed a full-time CEO in September, 2004 and in October, 2004, received a $3.03m Federal Government Start Grant to develop new drugs against inflammatory diseases. www.cortical.com.au

Dia-B Tech

Dia-B Tech listed on the Australian Stock Exchange on 24 January, 2005. It listed with a market capitalisation of $19.18 million after having raised $6 million from the heavily over subscribed share offer. Dia-B Tech is focused on the discovery and development of pharmaceuticals, diagnostics and treatments for diabetes and diabetes related diseases. An oral alternative to current diabetes treatment is scheduled for human trials by the end of 2006.

ES Cells International Pte

ESI was established in July 2000 with $17M in seed capital, to develop the human embryonic stem cells intellectual property owned by Monash Institute of Reproduction and Development (Australia), The National University of Singapore and Hadassit Medical Organisation (Israel), which has been exclusively licensed to ESI. The company has received extensive funding and support from the Economic Development Board in Singapore. www.escellinternational.com

Guardsoft Pty Ltd

Guardsoft is built on 10 years of university research and development. From this R&D, the company has developed a relative debugger called 'Guard'. 'Guard' supports the execution of both sequential and parallel programs on a range of platforms, and exists for a number of different development environments. www.guardsoft.net

Maccine Pty Ltd

Maccine began operations in November 2001. One arm of the business is the provision of pre-clinical research for the biotechnology and pharmaceutical industries. The other arm is the production and supply of new animal models for medical research with a primary aim of developing models for the study of a wide range of human diseases. Maccine moved its operations to Singapore in early 2004 and is constructing new laboratory facilities in Singapore with funding provided by the Economic Development Board. www.maccine.com

Metabolic Pharmaceuticals Ltd

Metabolic Pharmaceuticals was formed in late 1998 and was listed on the ASX shortly thereafter. Its focus is on developing therapies for metabolic diseases with an application to large markets worldwide, including obesity and obesity-related diseases such as type 2 diabetes. The company is currently in the final phase of Stage II clinical trials of its anti-obesity drug, AOD9604, developed at Monash University. www.metabolic.com.au

Nephrogenix Pty Ltd

Nephrogenix is developing cell based therapies for kidney disease. Nephrogenix draws on the collective research efforts of some of Australia's pre-eminent researchers in the fields of cell and tissue based therapies and kidney development to develop the next generation renal treatments.

Norwood Immunology Ltd

Norwood Immunology is a company focused on technologies and therapies to rejuvenate activity of the immune system, through re-growth of the thymus, improvements in bone marrow function and enhancement of T cell functionality. Norwood Immunology listed on the Alternative Investment Market in London at the end of 2003. www.norwoodabbey.com

Prostate Diagnostics Pty Ltd

Prostate Diagnostics was incorporated in 2000 to develop Intellectual Property generated by Monash scientists which postulated that the level of certain hormones, when measured in biopsies, appeared to be capable of predicting the prognosis of prostate cancers. Recent information overturns the original hypothesis and the company's direction is currently under review.

Premier Bionics Pty Ltd (formerly Pulmosonix Pty Ltd)

Pulmosonix was formed in 2002 to develop platform technology emanating from Monash University that uses sound to monitor lung inflation and related physiological conditions. This has led to the development of two devices, one that monitors lung inflation (continuously and in a non-invasive fashion) and the other that monitors obstructive sleep apnoea (OSA) and could become a routine diagnostic tool for OSA.

VacTx Pty Ltd

VacTX was formed by the CRC for Vaccine Technology, in which Monash is a participant, to develop and commercialise new vaccines to treat a range of human diseases.

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Case Study : "Inquirion"

Institution : RMIT University (RMIT)

Technology / Product / Service

The TeraText™ products, developed by InQuirion Pty Ltd, are a collection of high performance applications optimized to solve enterprise-wide text management problems ranging from technical documentation repository and management to military intelligence data mining. TeraText™ products are designed to provide sophisticated data management and searching of semi-structured, text-rich data together with the capability to scale in the size of collection and the number of users. More than 80% of corporate information is captured in documents not traditional databases. Currently organizations do not even attempt to exploit their entire document collection because the size and disparate nature of the document set require immense scalability and high performance and yet the sophistication required to fully utilize these complex text assets has been available only in products that do not scale.

Commercialisation Strategy

RMIT University established InQuirion Pty Ltd as a spin-off company in late 2001 following a long period of research, development and commercialisation using RMIT's own resources. The focus of the business has been to penetrate the US and European markets building on its success in the local market, which is relatively small. It is currently operating as a standalone business operating with a combination of licensing and direct sales in different markets. Inquirion services Australian, New Zealand and pre-existing Canadian customers directly with North American customers serviced via a licence agreement. Inquirion has received considerable support from RMIT over its development in order to maintain a viable research team, with consequent intellectual property, and commercial development. Inquirion maintains a strong research base through its ongoing relationship with RMIT an important factor in maintaining a competitive position in the market. RMIT also provides significant assistance in research expertise, finance and governance.

Outcomes and Current Status

Inquirion has a number of clients in Australia and North America using the TeraText products including US and Australian Defence, Australian Tax Office, Canadian Department of Justice, Tenix Defence Systems, and the National Library of Australia.

Inquirion continues to grow its client base in international markets through a licencing strategy. Its combined sales turnover was approximately $ 4 M in 2004.

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Case Study: "Genos"

Institution: Swinburne University of Technology (SUT)

Technology / Product / Service
Genos Pty Ltd is a leading provider of proprietary human capability psychometric assessments and associated services, specifically in emotional intelligence (EI) for use in the workplace, adolescent and professional sporting markets. EI, globally the most widely read social science topic, largely accounts for individuals' performance in the workplace and Genos EI is the most definitive and robust instrument in the market. Genos brings the latest suite of Emotional Intelligence instruments and programs into the global market. Genos helps organisations measure and develop the emotional intelligence of their employees, teams and the organisation as a whole.

Established out of Swinburne University following six years of R&D, Genos EI is the only EI assessment and reporting instrument that has been developed specifically for application in the workplace.

Commercialisation Strategy
The initial link of Swinburne Knowledge, SUT Commercialisation Team, began through in-depth discussions with the founders, progressed to facilitation with external parties and eventuated in the establishment of the Genos as a start-up company. Swinburne University and the founders hold equity positions. Swinburne Knowledge helped put together the basis of the original intellectual property and represented its staff and the University on a legal stand point. SUT still works closely with the Genos Team where association is managed via board representation.

The Genos instrument is available through a network of accredited consultants. The network consists of skilled consultants, HR professionals and psychologists who are trained to use the Genos Instrument to provide feedback to individuals, groups and organisations. Genos also works directly with organisations by tailoring specific emotional intelligence development programs to improve workplace performance in the areas of leadership, cultural change, team effectiveness, sales performance, recruitment and communication. Genos also provides internal accreditation programs for organisation's HR practitioners.

Outcomes and Current Status
Genos was established in August 2002. The founding shareholders are Swinburne Ventures Limited, Stough Palmer & Associates and Evolution Capital, bringing expertise in research, commercialisation strategy, technology and business management. By 2004 Genos engaged with over 50 blue-chip clients; established NZ (exclusive) and USA (non-exclusive) distributors; accredited 105 professional consultants and HR practitioners in Australia, 20 in USA and 12 in NZ; developed a highly sophisticated online delivery system. Ongoing research supports continual improvements to the instrument and allows Genos to expand into new markets.

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(Sydney BLO paste here)

Case Study : "iLecture System"

Institution : The University of Western Australia (UWA)

Technology / Product / Service

The iLecture system uses the internet to deliver lecture recordings over a standard internet connection. A high degree of automation ensures that audio and video content is captured, processed and delivered via a streaming web server 'on demand'. UWA currently records 340 lectures each week and delivers over 10000 individual lectures per week both on campus and in regional areas of Western Australia. Development of the iLecture system commenced in 1998, with the system being rolled out at UWA from 1999 onwards. The success of iLecture at UWA led to considerable interest from other Australian universities. A decision was made in late 2000 to offer the iLecture platform to Australian universities on a commercial basis.

Commercialisation Strategy

UWA's Office of Industry and Innovation has worked closely with the iLecture development team to devise and implement the commercialisation strategy. Feedback from potential clients indicated that their preference was to licence iLecture from UWA directly, rather than through a third party supplier.
A licensing model was developed in which universities pay a licence fee proportional to the number of recording venues in which the system is installed. Annual software maintenance fees generate additional revenues to fund regular system updates and product enhancements. An approach by the TAFE sector led to a modified "service-provider model" and the formation of a UWA start-up company called "Media Farm". This company is charged to introduce the iLecture technology to the TAFE and corporate sectors.

Outcomes and Current Status

As of April 2005, seven licence deals with Australian universities have been negotiated, with a further scheduled for later in the year. Based on current trends, the iLecture system is on track to achieve a 40% market share within Australia by the end of 2006. Cumulative licence revenues have exceeded $200,000 to date, and are set to increase as UWA looks to overseas markets. Significant interest has been received from US, with the ability to deliver iLectures to an Apple iPod and other portable devices seen as a major competitive advantage. It is anticipated that US market entry will be achieved towards the end of 2005.

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Case Study: Inner Vision Biometrics (IVB)

Institution: The University of Western Australia (UWA)

Technology / product / Service

'Ferriscan' is a novel magnetic-resonance image (MRI) analysis technology that enables the non-invasive measurement of the iron concentration within the liver. Iron overload diseases, such as Thalassaemia and Haemochromatosis, are common genetic conditions, and can lead to decreased health and life-expectancy if not treated appropriately. Prior to the development of *FerriScan*, liver iron levels were typically measured by taking a needle biopsy of the liver. This method is painful and inaccurate, and carries a significant risk to the patient.

The *Ferriscan* technology enables MRI centres around the world to image the liver in a unique way, before transmitting data electronically to the IVB analysis centre in Perth. Sophisticated image analysis software is then applied to the data to construct an accurate topological map of the liver iron distribution. A report is compiled by IVB and returned electronically to the MRI centre. This results in a turnaround time of 24 hours compared to two weeks for the biopsy route. *Ferriscan* eliminates all risks to the patient; offers a faster turnaround time; provides a higher degree of accuracy and is more cost effective when compared to the needle biopsy technique.

IVB won the Merck Sharpe and Dohme award for the most outstanding research commercialisation opportunity in the field of biotechnology and life sciences at the inaugural Commercialisation Forum and Fair of Ideas in Sydney, 2003.

Commercialisation Strategy

Interest in the *Ferriscan* technique was expressed by Perth-based company SKG Radiology when the project was still at the research stage within UWA. Seed funding from SKG Radiology led to the formation of a spinout company IVB in the year 2000. Additional capital was required to expand the business in 2003, and UWA's Office of Industry and Innovation (OII) played a leading role in facilitating the raising of $5.8m of expansion finance. OII developed the business plan with the research team, and presented the opportunity to a series of Australian Venture Capital companies. Three investment offers were presented to the IVB board by OII, together with OII's recommendations. This process took over nine months to conclude, and required a sustained commitment from both the research team and OII staff.

The research team's strategy of establishing collaborative linkages with key MRI centres across the world proved instrumental in achieving international acceptance of the *Ferriscan* technique. This made the process of obtaining TGA and FDA approval reasonably straightforward, and Ferriscan is now poised to achieve international success in both the commercial and scientific arena. All of the image analysis is currently carried out by the Perth centre, though it is likely that a US-based analysis centre is established as the volume of business continues to grow.

Outcomes and Current Status

Investor interest in the Ferriscan technology resulted in IVB undertaking a back-door listing into a healthcare company Resonance Health Ltd in 2003. Stakeholders have seen the company's valuation rise from $1m on incorporation in 2000, to over $10m in 2005. The recent TGA and FDA

approvals and resulting expansion in overseas markets will see the company continue to grow and proposer. The Office of Industry and Innovation plays an active role in ensuring that the interests of the UWA research team and the IVB research team are closely aligned, and that the commercialisation strategy adopted by IVB continues to generate significant shareholder value for UWA.

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Case Study : Advanced Nanotechnology Limited

Institution: The University of Western Australia (UWA)

Technology / Product / Service:

The company is an innovator and manufacturer of advanced nano-materials. Specifically, the company manufactures and sells a number of high quality nanopowders and dispersions which have applications in various markets. The first product is ZinClear® which is a transparent nano-particle dispersion of zinc oxide for UV protection in cosmetics and personal care products. Alusion® is a platelet form of aluminium oxide specially formulated for the cosmetics market and used to provide a soft-focus effect. An entirely different product, is a nanoparticle cerium oxide dispersion supplied Oxonica Limited, a UK company, and used as a fuel additive for diesel engines where it improves fuel efficiency and promotes cleaner burning. Advanced Nanotechnology Limited believes its broad based proprietary technology and multiple product applications will provide strong growth prospects.

Commercialisation Strategy:

The original research work on the mechano-chemical process to produce nano-particles was pioneered by Professor Paul McCormick and his team at UWA's Research Centre for Advanced Mineral and Materials Processing. Advanced Nanotechnology was formed in 1997 and originally named Advanced Powder Technology Pty Ltd. UWA funded a business planning and market-assessment study in return for equity in the company. The intellectual property of the manufacturing process is protected through three key patents which have international status. Further patent applications covering products and applications have been made. In May 2000, Advanced Nano and Samsung Corning established a JV to develop the MCP^{TM} technology at production scale. Samsung Corning invested $6 million for a 50% share in the JV and a further $1.5 million for a 10% shareholding in Advanced Nano. In April 2001 a $2.8 million AusIndustry Start Grant was obtained. In 2002, the Office of Industry & Innovation at UWA assisted the company with an additional $2M through introduction to a local investor. In the meantime, the company has successfully pursued the development of its distribution channels for its growing portfolio of products and further refined its R&D work.

Outcomes and Current Status:

In early 2005 Advanced Nanotechnology listed on the Australian Stock Exchange (ASX). The capital raising was over-subscribed, raising $9 million. The company has a strong board and is poised for further success and growth in 2005 and beyond. The UWA continues as the major share-holder with just under 30% of the issued capital, including shares held on behalf of the original inventors of the technology. More details on the company can be found at www.advancednanotechnology.com

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Case Study : Triple P

Institution : The University of Queensland (UQ)

Technology / Product / Service

Triple P (Positive Parenting Program) draws on social learning, cognitive-behavioural and developmental theory, as well as research into risk and protective factors associated with the development of social and behavioural problems in children. The program's five-level framework aims to tailor information, advice and professional support to the needs of individual families.

Triple P interventions range from the provision of media messages on positive parenting (Level 1), through to brief information resources such as tip sheets and videos, and brief targeted interventions (for specific behaviour problems) offered by primary care practitioners at Levels 2 and 3, to more intensive parent training programs at Level 4 and Level 5 programs targeting broader family issues such as relationship conflict and parental depression, anger and stress.

Commercialisation Strategy

Up to 2001, a range of Triple P interventions across the five levels were developed and tested for efficacy and a base of Triple P practitioners established from the Parenting and Family Support Centre at The University of Queensland. By 2000, Triple P had reached the point where the Parenting and Family Support Centre could no longer support its growth. UniQuest Pty Limited became involved in finding a mechanism for Triple P to continue to expand. A licence agreement was concluded with Families International Publishing which subsequently changes its name to Triple P International Pty Limited to be the exclusive provider of Triple P training and publications.

Outcomes and Current Status

Triple P International is an Australian company employing 14 people and exporting Triple P training and services to 12 countries. There are now over 15,000 trained Triple P practitioners worldwide and over 2 million families have been through the program. Triple P continues to expand internationally with strong interest in Norway and Japan.

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Case Study: Human Papilloma Virus (HPV) vaccine

Institution: The University of Queensland (UQ)

Technology / Product / Service

Human papilloma virus (HPV) can them infect the genital tract and is regarded as the cause of uterine cervical cancer. Four types of this virus cause about 75 per cent of all cervical cancers and another two types cause the vast majority of genital warts.
In 1990 UQ's Professor Ian Frazer began working on the basis of a HPV vaccine using virus-like particle (VLP) technology. This technology produces virus-shaped particles which mimic the real virus to produce a safe and effective immune response.

Commercialisation Strategy
UQ's commercialisation arm, UniQuest Pty Ltd patented Dr Frazer's VLP technology in 1994. The research had been supported by CSL and a license deal was negotiated between UniQuest and the company in February 1995. CSL on licensed the technology to Merck and Co. Inc (USA) to develop a vaccine to prevent cervical cancer and genital warts.

Outcomes and Current Status

The HPV vaccine is now in Phase III clinical trials and is expected to be released to the market in late 2005 or early 2006.

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Case Study : "Fultec"

Institution : The University of Queensland (UQ)

Technology/Product/Service

Powerful transient currents, or "surges", propagating through communication lines after lightning strikes can severely damage connected devices with delicate electronic components. The Transient Blocking Unit (TBU) is a revolutionary surge protection device which provides a full range of protection against all types of surges and is set to completely reconfigure the industry globally. The TBU shuts off the circuit in response to an incoming surge, allowing the surge to be shunted harmlessly off to earth. The market potential is for hundreds of millions of TBU components to be sold annually throughout the world.

Commercialisation Strategy

Commercialisation is being undertaken by Fultec Pty Limited, a start up company established by UniQuest Pty Limited, and subsequently by Fultec Semiconductor, Inc. The key goals to be achieved for successful commercialisation are to develop and demonstrate the effectiveness of a commercial prototype; to establish the key price points for market acceptance; to develop a practical cost reduction strategy; and to undertake field trials in conjunction with end users and distributors. Fultec will be the manufacturer of the TBU, although manufacturing will be subcontracted out, in order to maintain control over the product development and distribution channels.

Outcomes and Current Status

A very successful field trial was undertaken with Cairns Skyrail which had been suffering significant down time and equipment failures during the summer storm season. The TBU eliminated all the down time in the first major storm season after installation. Fultec received initial investments of $490,000 and $350,000 from Uniseed Pty Limited in 2001 and 2003 and another $1 million from the Allen & Buckeridge Emerging Technologies Fund in 2003. In April 2004, Fultec Semiconductor, Inc. closed a major investment round with two top tier US Venture Capital funds. Fultec expects to be launching its first fully commercial product onto the market within 12 months.

Contact details for further information :

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Case Study : "QRx Pharma"

Institution : The University of Queensland (UQ)

Technology / Product / Service

QRxPharma Pty Ltd is a bio-pharmaceuticals development company, established by UniQuest Pty Limited, currently developing and commercializing pain management and cardiovascular health products. The Company's lead product, a novel opioid, is targeted at the largely unmet, multi-billion dollar market for the treatment of moderate to severe pain. Additional products under development include haemostatic and anti-fibrinolytic agents. The Company also has research programs in pain and cardiovascular conditions based on its Venomics program, which centres on developing pharmacologically active recombinant proteins produced from the genome and proteome of Australian venomous snakes

Commercialisation Strategy

Initially UniQuest had 5 technologies developed at the University of Queensland that were in various stages of clinical development. There were two themes among these technologies, 3 were in pain control and 2 in blood management. One of the pain technologies already had phase I/IIa clinical data and was ready to enter phase IIb clinical trials. The other 4 technologies were at the proof-of-concept stage ready to enter preclinical testing. The commercialisation strategy was to put together a start up company that would take the novel pain treatment through to FDA approval and continue development of the remaining technologies. These remaining technologies constituted a risk mitigation strategy for the company. Either a trade sale or a license agreement to a pharmaceutical company would be sought after FDA approval had been obtained.

Outcomes and Current Status

QRXPharma was formed in late 2002, with an initial venture $10m capital investment, led by Innovation Capital (Australia and US), Nanyang Ventures (Australia), SpringRidge Ventures (US) and UniSeed (Australia). This capital has seen the Company take the lead pain therapeutic through phase IIb clinical trials, with an IND being filed with the FDA.

As of April 2005, QRXPharma are in the process of raising series B financing of between A$30-50 million to take the lead pain therapeutic through to FDA approval. They are also continuing preclinical testing of their haemostatic and anti-fibrinolytic agents to consolidate their product pipeline.

Contact details for further information :

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Case Study : "Lucia Publishing Systems"

Institution : The University of Queensland (UQ)

Technology / Product / Service

Lucia Publishing Systems is a start-up company formed by UniQuest Pty Limited to commercialise software and business systems developed at the University of Queensland's UQ Press & Bookshop and its Printing service. Two main products are being commercialised. podEXPRESS™ is a system that provides a simple tool for walk-up student printing of course materials from any online source including learning management systems. podEXPRESS™ provides both the software and the business system to handle thousands of individual print jobs per day. TextInfoNet™ is a printing workflow management system that gives universities control over printing of course notes and readers to reduce wastage to zero, control copyright and maximise client service effectiveness.

Commercialisation Strategy

The technologies have been licensed into the new start-up company Lucia Publishing Systems Pty Limited. The establishment of Lucia Publishing Systems (LPS) has been supported by a software and business development agreement with leading Australian printing company McPhersons Printing. LPS is in the process of negotiating a global reseller agreement with a printing equipment vendor that will see LPS systems bundled with hardware systems for sale into universities, colleges and schools worldwide. LPS will continue to develop the technology and will provide support to the growing deployment base of its software.

Outcomes and Current Status

A number of beta sites in Australia will soon be deployed and global sales are expected to commence by Q4 2005.

Contact details for further information :

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Case Study: HepatoCell Therapeutics Pty Limited

Institution: Unisearch Limited (University of New South Wales)

Technology/Product/Service:

HepatoCell Therapeutics Pty Limited is developing technology for high-volume production of viable hepatocytes (functional liver cells). These cells make up the bulk of a persons liver and are destroyed with chronic liver disease such as cirrhosis. Currently the only therapy is a whole liver transplant, but the number of people requiring a transplant far outnumbers available livers. An alternative that has been used is cell transplantation. The limitation with this technology is a steady source of cells. HepatoCell was established to develop and commercialise a technology for isolating and purifying hepatocytes from resected livers. This has the potential to be a huge source of cells.

Commercialisation Strategy:

Unisearch has worked with the inventor from early in the development phase and established the start-up company in mid-2004. Unisearch has provided management expertise and was successful in writing a BioInnovation Fund application for $170,000. This is combined with $250,000 in seed capital that was provided by Unisearch itself. The company is actively developing the technology through the animal trial stage with a Phase I clinical trial planned for early 2006. The aim is to prove that the technology works and that the outcome is safe and effective hepatocytes. The business model is a number of centres worldwide to harvest resected livers, process and then provide hepatocytes to hospitals. The company is currently seeking interest from potential investors for funding as the technology is progressively developed. It is also looking at collaborations with some companies and academic groups to accelerate certain parts of the development.

Outcomes and Current Status:

As yet there are no specific outcomes other than the research timeline is on track and the outcomes are as expected. The company hopes to be in a position to bring in further investors towards the end of 2005. Unfortunately due to the ownership structure, i.e. 1/3 owned by UNSW and 1/3 by Unisearch (a wholly owned entity of UNSW), it is currently not eligible for a Commercial Ready Grant and was therefore fortunate to be in a position to obtain a BIF Grant when it did.

Contact details for further information:

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Appendix 3

Commercialisation Forum and Fair of Ideas (CFFI) 2005

SPONSORSHIP & EXHIBITION PROSPECTUS

Overview

Knowledge Commercialisation Australia (KCA), and the Australian Institute for Commercialisation (AIC) are proud to announce that they are organising the second national *Commercialisation Forum & Fair of Ideas*. We also acknowledge the significant support of the Department of Education, Science and Training through the Commonwealth Government's Backing Australia's Ability initiative.

This event will build upon the outstanding success of the inaugural CFFI held in March 2003 (CFFI 2003). An estimated $40m has been invested in technologies released at the Event (see attached summary).

Our primary objective is to create a dynamic regional technology and innovation marketplace, thereby stimulating greater interaction and collaboration between the private sector and public research organisations in an increasingly open innovation system.

The Fair will showcase investment opportunities and technology/R&D Services now ready for market and available to business.

The associated interactive Forum activities will engage Australia's innovation community. They will feature outstanding international speakers, key players in industry, business and finance and leading researchers, scientists and engineering professionals.

CFFI 2005 will include:

- The Open Innovation Forum focusing on new perspectives and practices in creating innovation processes and systems that work;
- The Technology Fair Market Place and Exhibition;
- Best practice innovation tools and programs for SMEs;
- Networking opportunities;
- Training and Careers in Commercialisation Seminar;
- Presentation of the prestigious Peter Doherty Innovation Prize and other Awards for innovation and new technologies with market potential; and
- Investment Opportunity Presentation session.

In One Place, At One Time, Today's Knowledge – Tomorrows Innovations

At the Forum and Fair of Ideas critical connections will be made between technology innovators and business executives seeking opportunities and solutions to match their needs.

The CFFI 2005 Event will attract the broadest range of industry, business, investor, research organisation, university and government decision makers who are seeking to partner and collaborate with other organisations to harvest investments in knowledge and intellectual assets.

If you are in this market your organisation needs to be represented at CFFI 2005.

Fair Visitors and Forum delegates will be looking for new technologies and services in these industry sectors:

- Biotechnology and Life Sciences;
- Chemicals and Pharmaceuticals;
- Energy and Environment;
- Food and Beverage Manufacturing and Engineering;
- Government and University;
- Health Care;
- Information and Communications Technology;
- Electronics and Defence;
- Service Industries.

You should Exhibit your Opportunities and Services because you will gain:

- Direct access to Business/Industry Decision-Makers: Network with an influential audience at the largest gathering of Innovation experts in Australia.
- Recognition and exposure: Showcase our technology products and services at the innovation industry's most prestigious event. Attendees will be looking for the latest resources to help grow their business and yours.
- A competitive position: Reaffirm your organisations commitment to advancing excellent technology deals, collaboration opportunities and start-up ventures.
- Cost effective impact and reach: Reach hundreds of potential partners with in-depth information by using the Technology Fair as a vital communications channel.
- New relationships with future customers and suppliers: Meet business owners and managers during the Technology Fair, at the Forum, the educational workshops and social events.
- Updates on Technology and Innovation markets: Gain insights on trends and issues that can impact your customers and your bottom line.
- From a unique public relations opportunity: Generate goodwill by making a positive contribution to the innovation community.
- Contacts in government: Promote your capabilities and ideas to influential government representatives from around Australia.
- International contacts: Significant exposure of the Event, its participants and opportunities will be exposed to a global audience.

CFFI SPONSORSHIP OPPORTUNITIES

Sponsorship of CFFI 2005 will provide your organisation with an excellent opportunity to introduce or reinforce your profile to organisations that are active across the entire science, technology and innovation value chain. This valuable target audience will be made aware of your contribution leading up to, during and after this major Event.

The packages detailed in this Sponsorship & Exhibition Prospectus are designed to provide your organisation with the best possible exposure as well as the opportunity to align your product or service with a particular aspect of the Forum and Fair.

CFFI 2005 secretariat is happy to discuss ways of ensuring that your benefits as a sponsor best match your requirements. You are invited to make any additional suggestions or variations to the packages in this Prospectus to suit your needs and to fine-tune the details with us to ensure that you achieve optimum exposure and benefits.

WHY BECOME A SPONSOR OF CFFI 2005

TODAY'S KNOWLEDGE, TOMORROWS INNOVATIONS

As part of a comprehensive and effective marketing plan, sponsorship undoubtedly provides positive results – a particularly important consideration in today's competitive and fast-paced innovation economy.

- Establish and/or maintain a high profile: within a valuable target market – leading up to, during and after the event.

- Enhance the positioning of your organisation; across the knowledge industries.
- Gain wide media exposure.
- Exposure to a national and international audience of decision-makers involved in business intelligence, technology transfer and commercialisation.
- Introduce new products and services to existing and potential customers at one place at one time.
- Evaluate market attitudes towards your organisation and its offerings.
- Exposure to the people driving innovative developments applicable to industry, providing practical ideas and options to meet your requirements and to establish strategic relationships.
- Expand your networks; there will be enormous scope for developing your own select mailing list, nurturing and developing ongoing relationships with many potential new customers and service providers and meeting the people who matter – the innovators, investors, service specialists and key decision makers in amongst today's business leaders.
- Extensive exposure via the unique Book of Ideas and the CFFI 2005 web site to a national and international audience.

Your organisation will feature in all CFFI publicity materials as well as the opportunity to present your capabilities in the sought after Book of Ideas.

BENEFITS OF SPONSORSHIP

Your organisation will benefit significantly from participation and the exposure of your services/products/opportunities to eager technology and innovation hungry influential decision makers representing business investors and technology suppliers attracted from around Australia and overseas.

Your representatives will have ample opportunity to network both formally and informally with Forum delegates and Fair visitors during Networking Breaks and at social functions.

Your organisation's involvement and support of the *Commercialisation Forum and Fair of Ideas* will provide a clear demonstration of commitment to innovation, collaboration and commercialisation to generate outcomes.

Moreover, the opportunity to sponsor particular prize categories gives your organisation the chance to form longer-term alliances with new companies and technology ventures spun out of universities and other public research organisations.

Many sponsorship packages include advertising space in the highly sought after Book of Ideas which features all CFFI opportunities, exhibitors and sponsors.

TARGET AUDIENCE

Representatives of organisations involved in commercialisation of technology transfer and research & development outcomes, including:

- Investors, venture capitalists and business angels;
- Senior Executives in industry;
- Business development and research managers in industry
- Technology transfer professionals from the private and public sectors
- Researchers and Technology developers from public sector and private sector
- Executives from industry and professional bodies
- Regional development executives
- Government officials and policy makers
- Executives from emerging industry start-ups

Summary of Research Suppliers Outcomes Reported from the First Commercialisation Forum and Fair 2003

Over $40 m in investment funds have been attracted to opportunities exhibited at the first Commercialisation Forum and Fair of Ideas held in March 2003 at the Sydney Convention and Exhibition Centre.

A selection of outcomes:

- *Inner Vision Biometrics Pty Ltd* - a UWA start-up company with a non-invasive method for assessing liver disease was awarded the Sharp & Dohme Biotech Award of the CFFI, since then, a deal for $5.8M capital funding has been completed with the first tranches of $1.5M received. The company has also been backed into a public-listed entity called resonance Health (RHL) see ASX info.

- *Advanced Powder Technologies (APT)* - launched its second product (nanoparticled aluminium oxide for the cosmetics industry,) at the CFFI where many interesting leads were made. The CEO was extremely happy with the Exposure at CFFI led to a subsequent deal with Revlon and sales have commenced to the US. Further deals are being negotiated with Avon. APT's third product (cerium oxide, is an efficiency-additive to fuels eg diesel) and sales have started to Hong Kong.

- *VITROSTONE* - a UWA technology start-up company involved in inorganic polymers (artificial marble, pavers, etc, as building materials). Gained enormous exposure at CFFI including several important market leads. The $2M funding from a local investor was substantiated and the business is prospering.

- *Re-Time Jetlag® Glasses™* - CFFI was the first public display of the Re-Time Jetlag® Glasses™ that emit a certain intensity of light into the eyes of the wearer altering the body clock. Exposure resulted in over 250 enquires and over 20 television, radio or print media interviews generating international interest. Flinders Technologies is proceeding to full commercial development of the Re-Time Jetlag® Glasses™ during 2004.

- *Talking heads: (Vast Audio Pty Ltd)* – a 3D telephony University of Sydney start-up used its exposure at CFFI to win the NSW Enterprise Workshop (2003) business planning competition, secured a commonwealth government BIF Grant, and is in advanced discussions with an early stage investor. Three new patents have been filed and the company is now preparing for clinical trials of their new hearing aid device.

- *(UCOM Ten Pty Ltd)* – provides a new range of negative thermal expansion materials. The Sydney University team has been working closely with a leading venture capital firm. In late 2003 they won the Marketing Prize in the NSW Enterprise Workshop business planning competition. A second patent has recently been filed and UCOM Ten is already collaborating with industry partners offshore.

- *Targeting blindness* – Licensing opportunity (University of Sydney). Exposure at CFFI has been followed by a deal to licence a suite of IP relating to major causes of blindness. The deal includes significant cash and equity in a new start-up company that has already attracted multi-million dollar investment. Clinical trials are scheduled to begin in 2004.

- *The University of Sydney start-up, Objectivision (A revolutionary new glaucoma test)* - was a finalist at CFFI. The company has gone on to achieve US FDA approval for its Accumap test, and also US Medicare reimbursement. It has now signed an international distribution agreement with Heidelberg Engineering for the US and Canadian markets ITEK and UniSA

- *Entropic* - a high bandwidth communications technology enabling wireless Internet access on public transport and real time video links for emergency response vehicles. The new business, currently called 'Entropic', will be 'born global' with initial markets for this technology including

government transportation and public safety agencies both in Australia and around the world. Subsequent to exposure at CFFI, ITEK has joined forces in the pre-seed group SciVentures in a $1M deal to commercialise the technology.

- A major deal with a Sydney based company involving a start-up partnership will be announced in March 2004 by Adelaide Research and Innovation based upon a poster presentation at the CFFI in 2003

- More than 250 visitors attended the ANSTO booth at the CFFI 2003 to discuss the Business Lab concept which was launched at the event. All of the business Profiles: muCaps, MesoSponge, UltrLeach Technologies, Engineered Materials, Radiopharma and ANSTO Minerals Business Opportunities created significant interest and subsequent business for ANSTO.

- *Promics Pty Ltd:* This spin-off company has developed highly potent and selective molecules for the treatment for a variety of immunoinflammatory-mediated diseases such as rheumatoid arthritis, inflammatory bowel disease (IBD), and psoriasis. More than $3 million has been raised by Promics since the CFFI, to continue trials of its anti-inflammatory drug.

- *Adipogen Pty Ltd:* This project relates to the identification of a target for which antagonist compounds could be used as an effective anti-obesity therapeutic. In the last 12 months, Adipogen has received more than $500,000 in investment. The investment was sourced from TeqStart ($250,000) along with a BIF grant ($234,000) and an ISUS grant ($73,000).

- *FulTech Pty Ltd:* FulTech is a spin-off company that was formed in 2001 to commercialise the transient blocking Device (TBU). The TBU is a patented device specifically designed for use in the over voltage protection of telecommunication and data systems. In March 2003, FulTech secured an investment of $350,000 from Uniseed Pty Ltd (following on from an original investment of $490,000 in August 2001). This was supplemented in August 2003, with a $1 million pre-seed investment by Allen & Buckeridge Emerging Technologies fund. Currently, FulTech is undertaking a major funding round to enable it to expedite its major product development projects. It intends to launch the first of its Mustang range of products into the market in 2004 and the first of its Firebird range in mid 2005.

- *Thrombostat Pty Ltd* (formally Thrombocare): Thrombostat is a spin-off company with a therapeutic compound that exhibits the equivalent efficacy to aspirin but with reduced ulcerogenic properties. In the last 12 months, the company has raised more than $800,000 from UniSeed, BioStart and BIF to fund the development of anti-thrombotic compounds through preclinical and toxicology studies. This preclinical program is in process with the current focus on synthesis of improved compounds and testing in vivo.

- *NeckMetrix:* This invention covers two related devices for the diagnosis and treatment of neck pain and headaches related to neck muscle dysfunction. The NeckMetrix research team was recently awarded an NHMRC Development grant ($159,795). This grant will fund a further year's research and development to clinically validate the NeckMetrix devices. The grant is in conjunction with financial/linkage support of a major insurance company.

- Since the CFFI Event, Global Cardiac Solutions, the Queensland based start-up company commercialising the James Cook University technology for arresting and protecting the heart in Open-Heart surgery, has extended its IP protection and strengthened its US collaboration, and is in the process of establishing US and UK offshoots. The company is currently negotiating investment in the US and the UK for $14M AUD and there is continuing local venture capital interest in the technology.

- CFFI was the inspiration for Aussie Opportunities. Representatives of Pacific Capital and the Australian Institute for Commercialisation were present at CFFI and saw the need to have an easy to use web based system to permanently display and update Projects that KCA members

were working on. With the support of KCA Aussie Opportunities is now up and operating. AO is highly successful and as at mid February there are 151 Projects listed and 365 subscribers. These subscribers include Australian Investors, Operating companies, Overseas Investors and Government authorities.

For more information see www.aussieopportunities.com

- CFFI not only provided our early stage investment the opportunity to apply commercial rigour/peer review by presenting our technology; but for the first time show cased all the available technologies from the University commercialisation offices around Australia in a professional format suitable for review and prospective investment from other investors. Congratulations to the organisers and I trust this will become at least a biennial event. (SciCapital Pty Ltd)