Collaboration:
The 21\textsuperscript{St} Century Mechanism for Success
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Publisher

Business/Higher Education Round Table
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Collaboration: The 21st Century Mechanism for Success

November 2013
Through the B/HERT’s various activities, it is acutely aware of the forces of change which are imposing themselves on all sectors of our economy and society. Whatever the structure of the Australian economy, it is critically important that our economy pursues ‘seeds of growth’ that are sustainable, growth-orientated, and globally relevant. To do so requires not only business to collaborate, but it also requires the businesses and the higher education sector to work creatively and collaboratively; be it in new thinking, operational execution or strategic intent.

The value derived from business higher education collaborations is real, differentiated and positive. Business higher education collaborations-
• utilise Australia’s highly-skilled workforce;
• assist the efficient allocation of capital;
• play to Australia’s strength in governance; and
• distribute enterprise risk equitably.

The challenge for tertiary education providers is that collaboration with the business community is not necessarily embedded in their organisational DNA. The drivers of business higher education collaboration are not explicit nor uniform across the sector. The broad remit of tertiary education providers i.e. teaching, research, engagement, also means collaboration with business too often remains an opportunistic rather than planned activity.

However, what is pleasing is that the operational approach to business higher education collaboration on the whole is structured and outcome orientated. Such an approach articulates clearly each party’s expectations, and assists in overcoming barriers to productive engagement including cultural differences, timelines, resource allocation and the level of ownership within each partner’s organisation.

The case studies that follow illustrate the value of collaboration. It is also pleasing to note the positive effect winning a B/HERT Collaboration Award has on the partnerships. As with previous winners these case studies demonstrate what can be achieved when business and higher education partners work together for a common goal. Business higher education collaboration is not easy, but as these case studies demonstrate, the potential rewards to both parties can be substantial.

Bill Scales AO
President, Business/Higher Education Round Table

Preface

The Business/Higher Education Round Table (B/HERT) has had a singular purpose over the past 23 years: to facilitate and nurture the engagement and connectivity between higher education providers, business and industry, and government. As a result of the Round Table’s efforts, there has been marked improvement in the level and quality of connectivity between these sectors. However, it is and will remain a work-in-progress.
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The case studies that follow represent a broad sweep of industries, disciplines and intended outcomes. They are uplifting and reflect what can be achieved with spirit, transparency and commitment.

B/HERT has only lightly edited these case studies. We believe that they best convey the essence of the lessons from business higher education collaboration when they are conveyed in the words of the collaborators themselves.

What becomes evident upon reading the case studies is the positive effects business higher education collaboration can bring, whether it be for public good or market-driven [commercial] outcomes. Collaboration is a partnership between two or more parties i.e. it is fundamentally a relationship. As such business, higher education collaboration brings with it all the complexities, intricacies and nuances of a relationship. The case studies demonstrate what successful business higher education collaborations can achieve. Below are a number of lessons from these case studies.

- There must be a compelling reason to collaborate, an identified need.
- Ensure there are common objectives and outcomes, shared values and mutual opportunities.
- Nominate a single entry point for engagement, where possible.
- Initiate a structured approach when formalising why, how, who and when.
- Ensure the governance structure accommodates changes in organizational representatives.
- Work to make the collaboration sustainable [authentic] and inclusive.
- Establish and maintain clarity around IP ownership.
- All parties should contribute and all parties should benefit.
- Be cognisant of the difference between collaboration and a consultancy.
- Be alert to different operational timelines e.g. universities may be constrained by semesters and curricula parameters.
- As the collaboration matures, be open to intended outcomes changing and be flexible, in order to offer customised services.
- The collaboration must be managed through a lifecycle where continuous improvement and contextualisation account for changing dynamics and personnel within the collaboration.
If one takes on board the above, the case studies illustrate that the positives to be gained are tangible and lasting. The case studies illustrate that the benefits, not excluding revenue generation, may include:

- The breaking down of the barriers between academia and industry.
- Long-term cooperative joint ventures.
- Industry personnel involved in the delivery of student programs.
- The amplification of the collaboration through new partners and projects.
- Building trust and engagement with the community through mutual benefits.
- A positive impact on pedagogy when students are involved in the collaboration.
Each year, B/HERT calls for nominations from the Australian business higher education community for a range of awards for the best collaboration between them.

A selection of previous B/HERT Award winners was invited to respond to a series of questions on the topic of collaboration. Those questions and the responses are listed in the Appendices.

What follows are these case studies presented under a number of headings.

**The Partnership** – who and why?

**Strength of Relationship** – level of involvement, obstacles, barriers, growth, has the collaboration matured?

**Outreach/Inclusion** – has the collaboration broadened, attracted new participants and/or become a model for other collaborations?

**Benefits** – what were the outcomes?

**Cultural Impact** – has the collaboration had an effect on the partners, and if so how?

**The Essence of Collaboration** – what is the DNA of collaboration?

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**Winning the B/HERT Award**

**B/HERT Take-out** – the core message of what makes a collaboration successful.

We hope you enjoy reading these case studies, and that their publication inspires many more businesses and higher education institutions to collaborate, for their own benefit and for the benefit of our nation.
Overview

The Passenger Transport Act 1990 in NSW was a major threshold of change for the bus and coach industry. It challenged the Bus and Coach Association (BCA) to understand the implications of the forces of change that were heralding in alternative ways of delivering services such as competitive tendering, compliance with minimum service levels, performance benchmarking of operators who do not compete head-on with each other (e.g. scheduled route services in urban areas) and economic deregulation. The BCA together with the government of the day and the Institute of Transport & Logistics Studies (ITLS) saw a need for ways of ensuring that self-regulation of the industry could be met through better managed bus and coach businesses.

The Partnership

This began one of the greatest success stories in management training – the introduction of the Certificate of Transport Management (CTM) and the Certificate of Coach Management (CCM).

Both programs continue to be important instruments in the self-regulation of the industry and have assisted operators address current issues. Over 3 500 people have now completed the programs. Annual participants average 200. A growing proportion of participants are manufacturers, regulators and new entrants all of whom find the program the best way of getting to know the bus and coach industry.

The program has eroded many barriers of communication and added enormous pride to membership of the industry. In particular it has broken down barriers between industry and academia. Increasingly each year we have a few operators moving from the industry Certificate of Transport Management into ITLS’s Graduate Certificate of Transport Management and articulating up to a Master of Transport Management (MTM).

Strength of Relationship

The relationship between ITLS and the BCA is extremely strong to such an extent that it is frequently referred to as the ‘family’ by both parties, and in partnership is recognised by government as an icon of what can be achieved through cooperative joint ventures. The extent of involvement includes:

1. All modules in the certificate programs being taught equally by industry personnel and academics in ITLS. Industry personnel include the Executive Director of the BCA, bus operators, and representatives from the NSW Ministry of Transport. Academics teaching in the program are Professor David Hensher and Dr John Rose.

2. A quality partnership in research programs in ITLS that is in part funded by the BCA through an annual donation since 2000 and earlier funding through donation of a senior lectureship over six years plus numerous grants for specific research. The following are examples of important contributions to the BCA’s knowledge base:

   - The safety of school children on buses (where evidence showed conclusively how safe buses really are).
• The cost of providing accessible bus transport under the Disability Discrimination Act 1992. A major side-benefit of this study was the development of a software program for an operator to identify the appropriate time to replace a bus and/or coach given the financial constraint, compliance with maximum average age and compliance with the DDA conditions.

• Monitoring of the challenges facing the bus and coach industry given the dominant role of the car.

• The development of arguments to support bus-based transit-ways as a more cost effective alternative to light rail.

• The development of a service quality index for determination of a performance assessment regime. This research is ongoing. In 1999 28 operators participated in an on-board bus survey of a sample of users. Together with financial data, ITLS is constructing an indicator to identify best practice service quality levels and the cost of delivering such a level of quality. In 2000–01 Busways and State Transit participated in a developmental phase that built on the knowledge from the pilot phase.

• The identification of suitable environmental and waste management programs for the operators which are consistent with reducing greenhouse gas emissions.

• An assessment of the amount of CO₂ (the major greenhouse gas) that is associated with manual and automatic buses and the concern that a move to automatics is resulting in an increase in CO₂ due simply to the less emitting manual buses.

• A study of the next generation of people from families with a long-standing involvement in the industry to identify ways of ensuring a smooth transition.

• International benchmarking program which annually surveys subscribing operators and benchmarks their performance in respect of cost efficiency, cost effectiveness and service effectiveness against themselves (over time) and against other operators in comparable markets.

• Ongoing design, development and implementation of a Driver Assessment Centre.

• ITLS working with the BCA and the Bus Industry Confederation (BIC) in the development of the technical program at the annual BIC conference held in different locations in Australia each year. Since 1991, ITLS academies have presented papers each year at the conference.


• In 2002–06 worked closely with Ministry of Transport and BCA (NSW) in the bus reform
agenda for NSW, with ITLS acting as facilitator in workshops to identify the key issues and then to develop an alternative service delivery model based on value for money and compliance with social obligations, given commercial imperatives of operators. This is an ongoing process with ITLS central to the activities. In January 2005, Professor David Hensher wrote a paper on margins for private operators, which was presented to the NSW Minister of Transport as the definitive statement on international evidence. In early 2006 Professor Hensher wrote a paper on asset ownership and incomplete contracts to assist deliberations between industry and government.

- Introduction of GIS/GPS capability to track the on-time running performance of bus operators.
- Major input into the preparation of fare increase submissions to IPART, the NSW regulatory body.
- Development of a framework for implementing performance-based contracts.

**Outreach/Inclusion**

The program has provided the template for other industry programs of training and research. ITLS has initiated the extension of the NSW program to Western Australia (with a partnership between ITLS, the WA Department of Transport and the Private Bus Industry) as well as a partnership in Victoria between ITLS and the Bus and Coach Association of Victoria. The template was provided to Queensland Transport who decided to run the program themselves. In addition, the successful formula has been translated into ITLS’s logistics and supply chain management program in which ITLS now runs a Certificate series in logistics, supply chain, retail logistics and freight management. This program articulates into the graduate program and in 1999 ITLS established graduate degrees in logistics management at the graduate certificate, graduate diploma and master’s levels. So important and popular is the structure of the program and its contents that we predict that over time it will be larger than the bus and coach program. The impetus however, grew directly from the bus and coach program.

The spin off to participating organisations has been extraordinary:

For ITLS, it has financed a substantial amount of its research activity, as well as, motivated the initiation of a graduate coursework Master’s program that was supported heavily by the Bus and Coach Industry through enrolments. About 30% of the initial students came from the bus and coach industry. In addition ITLS’s success in becoming a national centre of excellence through the Key Centre Award from DEETYA was largely the product of the successes achieved through the partnering with the BCA and the active support from Mr. Jim Bosnjak OA (previous owner of Westbus and previous President of BCA). For the BCA, they had for the first time an external body that had the respect of government and industry that they could call-on to provide training as well as research outputs to assist the development of the bus and coach industry. The Minister for Transport in the early 1990s (The Hon. Bruce Baird) described this partnership as one of the great successes in transport, breaking down the huge barriers between academia and industry. To this day, no other transport sector has secured such an accolade in NSW.

**Benefits**

The educational benefits are huge in that what is being provided to industry is an opportunity for training that
Collaboration is an enabler of change. Education programs can facilitate necessary change and bring improved professionalism to an industry. Collaborative success can deliver unintended benefits to the parties involved e.g. international profile, investment opportunities.

This project provided direct educational benefits and helped change the culture in both organisations.

David Hensher is Professor of Management, and Founding Director of the Institute of Transport and Logistics Studies (ITLS) at The University of Sydney. A Fellow of the Australian Academy of Social Sciences, Recipient of the 2009 International Association of Travel Behaviour Research (IATBR) Lifetime Achievement Award, the 2006 Engineers Australia Transport Medal, the Smart 2013 Premier Award for Excellence in Supply Chain Management. Honorary Fellow of Singapore Land Transport Authority. David has advised numerous government and industry agencies in many countries with a recent appointment to Infrastructure Australia’s reference panel on public transport.
The Partnership

MyScience was conceived out of an identified need. Early in 2006, the Science Foundation for Physics (USyd) convened a meeting to initiate discussion around ways for the university to provide significant support for primary science education. A project team was established comprising representatives from the Foundation (Chris Stewart and later Adam Selinger), NSWDET (Anne Forbes and Gerry McCloughan), and IBM (Bettina Cutler). ACU also became a foundational partner when Forbes joined its staff. To date, the program has been funded by small donations and sizeable in-kind support from the four founding partners – ACU, IBM, Western Sydney Region of the NSW DET, and the Science Foundation for Physics.

Initially there was broad agreement to develop a primary school science and technology program that provided support through the establishment of a sustainable model of collaboration between schools, industry/business and university to stimulate interest and enhance capacities of primary science teachers and students in conducting authentic scientific investigations.

Teacher expertise and confidence are advanced through purposeful and continuous professional learning, provided by expert facilitators. Students are mentored by practicing scientists through face-to-face sessions and interaction in a secure online environment. Achievements are acknowledged and showcased in school science fairs during National Science Week and then submitted to the Young Scientist awards (conducted by the Science Teachers’ Association of NSW).

Strength of Relationship

The collaboration has been successful.

The process used to recruit participating organizations has been through contacts and relationships known by individuals as they participated in and became interested in the program.

The numbers of schools, teachers and mentors participating in MyScience increased dramatically over 2006-2008. From 2009-2013 the number of schools and organizations remained fairly constant because a lack of funding prevented scale-up of delivery.

Outreach/Inclusion

Research findings indicate that when people come together and follow the MyScience ‘steps’ a
‘community of science practice’ (CoP) develops where stakeholders learn through participation. Participants’ views have been used to modify elements of the program, and this will continue into the future.

The MyScience educational model was developed to provide scaffolding for the above aims and comprises:

1. Collaborative professional learning for primary teachers;
2. Clear achievement criteria;
3. Promoting and supporting scientific investigation amongst primary students;
4. Mentoring of primary students by people with science expertise; and
5. Acknowledgement and recognition of achievements.

Other keystone elements that were developed to support implementation of the program are:

- An empowering structure and support for primary teachers to effectively teach science and technology;
- Purposeful and hands-on investigating for teachers and students;
- Student interest and ownership, building from guidance to freedom to select their own areas for investigating; and
- Using science as a context for teaching and learning of literacy and numeracy.

Benefits

MyScience has evolved as an urban school-community initiative with research findings suggesting likely ‘conditions’ for success and has produced evidence of participants’ transformed understandings about the nature of science, science teaching and science learning. The school-community model underpinning MyScience provides an indication of how the initiative could be embedded in the science curriculum of both primary and secondary schools resulting in enhanced engagement, interest and learning in science.

ACU is in the process of submitting a proposal for MyScience funding to the Australian Maths and Science Partnership Program (AMSP) with four educational sector partners in Sydney, NSW – CEO Broken Bay, CEO Sydney, CEO Parramatta, NSW DEC. ACU, through its Equity Pathways Program has expanded MyScience into Goulburn, Temora, Brisbane and Melbourne.

In addition, seed grant funding has been awarded to the Professional Teachers’ Council of NSW by AusAid for a pilot to trial the combined implementation of MyScience with the Global Education Project NSW ≈ Global Education + MyScience or ‘GEMS’. This project is to be trialled in 2013 in 2 schools – one in Armidale and one Sydney. If successful, Global Education perspectives could underpin the class theme around which students generate questions that they are interested in investigating scientifically.

Cultural Impact

Of the initial partners involved most schools have remained in the program, as has ResMed. BASF decided to conduct its own outreach program. USYD decided to run its own version of MyScience.

When a party to the collaboration did not follow the essential elements of the program, there were real concerns as to whether the program would become less effective. In the beginning governance was performed through a Project Steering Committee
Collaborations can be effective in meeting specific needs. Transformation in outcomes is possible when there is coordinated and aligned commitment amongst the collaborating partners. Continued quality outcomes may become vulnerable if this commitment diminishes. Governance issues are critical to successful collaborations and should be reviewed regularly.

Anne Forbes is currently in her fourth career having been a research scientist, mother (continuing), teacher, and now academic – as a primary science educator at the Australian Catholic University based in Strathfield, Sydney. Her passion is working with primary teachers and their students; with the support of mentors with science and technology expertise, to help them to better understand the practices of science – what it means to truly ‘work as a scientist’. The development and implementation of MyScience communities of practice has been one of her driving forces since 2006. For more details on Anne’s background go to http://apps.acu.edu.au/staffdirectory/index.php?anne-forbes

The Essence of Collaboration
In the first instance, personal contacts followed by a successful track record of program implementation with supporting evidence. Partnerships need to be inclusive so that from the beginning the needs of all organisations are incorporated. Also, the authenticity of the collaboration must be maintained when changes occur in organizational representatives.

Winning the B/HERT Award
The prestige of winning the Award was used as part of an application for funding to the Ian Potter Foundation in 2009. Consequently, MyScience was awarded $50,000 (over 2 years: 2009–2010) to develop online support materials for teachers.
The Partnership
Impressed by a 2006 QUT landscape architecture student design project, the Burnett Mary Regional Group (BMRG) approached QUT with a proposal for a similar project. BMRG brought further regional partners into the initial 2007 project, Bargara Pasturage Reserve: Burnett Shire Council, Wetland Care Australia, and Landcare Australia. The success of this project prompted QUT to seek to continue the partnership with BMRG, and consequently BMRG introduced QUT to representatives of the Port of Brisbane Corporation (PBCorp).

Strength of Relationship
The partnership between BMRG and QUT developed quickly and was formalised within three months from initial contact. The PBCorp had an existing relationship with QUT and so the forming of this tripartite partnership was rapid and smooth due to immediate recognition of shared aims and values, as well as mutual opportunities.

Each project partner was in some way involved with the planning, design and/or management of coastal settlements, recognising them as complex natural, cultural, economic and social systems requiring holistic and customised approaches. A shared belief is that communities need to be involved in the creation of solutions to the challenges they face, rather than the more narrowly focused solutions offered by standard consultancies. The partnership was formed between the university, private and public sectors to facilitate such community engagement.

QUT believes the most important elements in establishing a partnership with another sector include:

a) Ensuring a partnership always contains more than two partners to avoid university student-related projects devolving into just two-way commercial style consultancies.

Overview
This partnership expanded the boundaries of community engagement practice to deliver creative design and engineering solutions to the challenges faced by coastal communities. Queensland University of Technology (QUT) and partners shared this commitment to offer directions towards social, economic, environmental and cultural sustainability within these communities whilst also facilitating high quality tertiary education through student immersion in real communities.

Collaborative projects have seen the delivery by QUT students of a range of diverse, relevant and innovative solutions to two coastal communities enabling them to move forward with sustainable futures planning. Two further projects were developed in response to the success of our community engagement model in mobilising the ideas and expertise of partner institutions and those intrinsic to community networks, and our delivery of excellent project outcomes to those communities.
b) Clear communication before any agreements are reached of:

- Each partner’s values, priorities, goals, expectations, limitations, and timelines;
- What each potential partner is willing and genuinely able to contribute to the partnership and what they each hope to gain from it; and
- The ability of each partner to absorb the possible failure of any or all aspects of a project.

c) The development and maintenance of the partnership requires the establishment of:

- Personal working relationships amongst key individuals in each partner organisation;
- Clear, agreed communication protocols amongst partners via the key individuals; and
- A pre-emptive transition strategy when any of the key individuals are to depart an organisation.

**Outreach/Inclusion**

Together the parties completed a further successful project in the Wide Bay-Burnett region, Port of Bundaberg: Integrated Solutions to Sustainable Growth in Coastal Queensland. The projects attracted the attention of a representative of the Karumba Progress Association, who invited QUT to undertake a similar project in the Gulf of Carpentaria Linking Karumba: Creating Sustainable Connections in 2008, which led to a set of further partnerships, Get EnGulfed: Normanton2020 in 2010. Thus, the partnership developed on a project-by-project basis, with funds and in-kind support contributed by all, and insurance and intellectual property negotiated using customised legal contracts.

Based on the success of this partnership, QUT Schools of Design and Urban Development established long-term partnerships with a further six public and private sector partners and undertook a further four major projects including two projects already mentioned in the far north Queensland Shire of Carpentaria.

**Benefits**

All project objectives were met and indeed exceeded expectations. Public and private sector partners discovered the extra benefit of a university project as a means to build trust between themselves and communities they operate within. These projects succeeded in drawing on the unique knowledge and skills of all parties as well as benefitting all, which was our overarching philosophical objective.

The education of future design and engineering professionals is a high national and regional priority and QUT has a strong focus on ‘real world’ teaching and learning, offering students the highest possible standard of educational experience. The QUT staff sought to engage with partners willing to contribute to research concerning the practice and benefits of real world learning, including improving delivery of high quality experiences and design outputs for both students and communities.

As a testament to the deepening of this collaboration, QUT, BMRG, and PBCorp chose to undertake the third successful project in the Wide Bay-Burnett region in 2010: A Tale of Two Marinas: Burnett Heads and Port of Bundaberg.

**Cultural Impact**

Right from the beginning, QUT, BMRG and PBCorp shared a commitment to ensuring the quality of both the engagement process as well as the outcomes: all partners should contribute throughout the life of a project and all partners should benefit from the project. We shared an active commitment to encouraging communities to feel as invested in contributing to student education as students would feel invested in the delivery of high quality design and engineering outcomes to that community.

The collaboration between QUT, BMRG and PBCorp did deepen through the experience of working together. Each partner has a specific expertise base and coupled this from the start with an interest in learning from one another. For example, PBCorp and BMRG developed a greater understanding of tertiary design and engineering pedagogy; QUT staff and students developed a deeper understanding of the complexities at the real world interface of natural and commercial environmental management, and the challenges of addressing these within the realm of real coastal communities. The deepening of our relationship was evidenced in the growing confidence each partner demonstrated in communicating with students and communities from a base of shared values and pooled knowledge and skills.

This partnership’s focus on enriching both engagement processes and outcomes engendered a positive shift in the thinking and practice of all partner organisations regarding how we interface with other sectors and local communities.

**The Essence of Collaboration**

The only impediment this partnership needed to address was the negotiation of our different operational timelines. As the relationship evolved there was more familiarity with each other’s annual industry cycles, corporate cultures and priorities. For example, it was challenging for the other sectors to appreciate the deadlines and restrictions of working within the framework of university semesters and undergraduate curricula.

The benefits of establishing a partnership with another sector are almost too many to list. Overall, engagement with other sectors affords the gaining of new perspectives and access to new knowledge and practices which enrich one’s own knowledge and practice.

Some of the specific benefits gained through our particular partnership model for the university include the experience for students, and to a lesser extent staff, in the application of knowledge and skills in real rather than simulated settings and to real issues and people. We benefited from exposure to the expert technical
knowledge of industry and the more ephemeral forms of knowledge in the community sector. Through reflective practice across projects a best practice model was able to be developed for design and engineering education through community engagement, with strong applicability in other domains of tertiary education.

The private and public sector partners gained exposure to new knowledge based on university research and practice and cutting edge and experimental design and engineering approaches. Partners were able to view issues through each other’s eyes without bias, opening up new levels of understanding and communication between sectors.

**Winning the B/HERT Award**

Winning the B/HERT Award reflected back to all three partners the value of the collaboration, leading to the agreement to undertake the 2010 project *A Tale of Two Marinas: Burnett Heads and Port of Bundaberg*. PBCorp valued the relationship highly enough to ensure that this project agreement was honoured by the new Port of Bundaberg management, Gladstone Ports Corporation (GPC), when PBCorp was dissolved in 2009–10. GPC was keen to continue participation in an award-winning partnership.

**B/HERT Take-out**

Collaboration is an effective mechanism for activating a network of participation. Shared success can broaden the original premise for the collaboration. A well designed and executed collaboration can improve learning methodologies, and meet complex and diverse expectations.

This project design demonstrated clear educational benefits and practical community outcomes.
Overview

The Medical Device Partnering Program (MDPP) in South Australia represents a successful example of a structured approach to industry engagement and collaborative product development in an industry where collaboration is difficult due to a predominance of small to medium enterprises (SMEs). The MDPP provides a model for medical device collaboration between researchers, end-users and industry that streamlines and accelerates the medical device research and development process and drives the development of new medical device products.

The aim of the MDPP is to provide a model for medical device collaboration that streamlines and accelerates the research and development process and engages stakeholders more widely.

The program has been developed to address well-recognised barriers to engagement between research organisations and industry: different motivations, needs, and cultures; no single entry point for engagement; and differing expectations regarding intellectual property (IP) ownership resulting in technology transfer challenges.

The Partnership

The MDPP was developed by Flinders University in response to difficulties encountered in partnering with companies on medical device research projects. The model was designed to address problems in collaborating with SMEs through a transparent approach focused on building relationships.

Established in South Australia, the MDPP is a partnership of 16 supporting organisations from research, government and commercialisation sectors in South Australia. Partners include:

- **Research:** All three publicly-funded South Australian Universities (namely Flinders University, University of South Australia and the University of Adelaide) plus disability research organisation NovitaTech are involved in the Program and have been from the beginning. Each research partner brings multi-disciplinary research expertise in medical devices and access to state-of-the-art facilities for product development and testing.

- **Government:** The MDPP is supported by government organisations including Department for Manufacturing, Innovation, Trade, Resources and Energy (DMITRE), Department of Further Education, Employment, Science and Technology (DFEEST), Department for Communities and Social Inclusion (DCSI) and the Office for the Ageing (OFTA). These organisations provide strategic advice to the program, and access to existing programs and services that align to medical device research, product development and end-user engagement.

- **Commercialisation:** expertise and advice to MDPP projects is provided by Flinders Partners, BioSA and Commercialisation Australia.

Strength of Relationship

The MDPP was initially funded from 2008-2011, however due to increased interest and the success of the program, the MDPP has attracted additional investment from State Government to continue.
The level of collaboration between partners has strengthened throughout the life of the MDPP, with new partners now involved. The MDPP has introduced a service provider initiative to facilitate the flow of information and assist industry clients to gain greater access to relevant resources and expertise.

Since the MDPP was launched, the level of involvement from key partners and other organisations has strengthened. MDPP partners have continued to meet regularly to discuss and assess MDPP project opportunities and to identify relevant researchers and facilities for each project from across the partner network.

**Outreach/Inclusion**

The MDPP has brought together a network of stakeholders in the medical device development process; facilitated new, targeted partnerships between research organisations, end-users and companies; and provided practical assistance to take the ideas closer to the market. More than 100 companies have benefited from involvement in the program to date.

New partners have come on board and the level of collaboration among universities has strengthened. The number of companies approaching the MDPP continues to rise steadily, and the MDPP network has grown substantially. Facilitated by regular MDPP networking events, we have witnessed an increased level of engagement within the medical device industry. The MDPP has established itself as the portal within South Australia for co-ordinating medical device collaboration activities, and there has been increasing interest from interstate and overseas.

Through the rapidly increasing MDPP network, companies can access advice on innovation and commercialisation such as: product design, project management, knowledge transfer, funding opportunities, regulatory issues and manufacturing. All companies are invited to attend quarterly networking events which regularly attract 50–60 participants.

In addition to research/industry collaborations, the MDPP has also brokered relationships between companies (who have shared knowledge, information and equipment) and between companies and manufacturers. These outcomes would not have been possible without the initial MDPP collaboration.

**Benefits**

The success and outcomes achieved through the program have far exceeded our initial expectations and aspirations, with more than 100 companies having benefited from involvement in the program to date. In addition to this, the MDPP has:

- Increased linkages between research organisations and SMEs;
- Created a non-competitive environment for research collaboration across the SA research institutions; and
- Established an active network of all relevant stakeholder groups providing support for industry growth.

Specific achievements include:

- 18 new prototype medical devices designed, developed and constructed;
- 23 proof-of-concept/validation studies undertaken;
- a further 30 companies provided with expert technical consultation and advice;
- 37 companies provided with input and feedback from end-users or market advice; and
- 54 introductions/linkages made for product commercialisation.

By offering up to 250 hours of coordinated assistance to accepted projects that demonstrate market potential, the MDPP removes barriers between stakeholders and provides a space for ideation and innovation. The short projects provide opportunities for those involved to establish trust and common ground, and a basis for future funding or investment.

For example, some of our projects have resulted in ARC Linkage grants and funding for PhD Scholarships to undertake further research which would not have occurred without the initial 250hr project. This is a great outcome for both industry and the research organisations. In addition to undertaking project work, the MDPP holds quarterly ‘industry breakfast events’ whereby members of the medical device community are invited to network and learn from relevant speakers. These events are hugely successful and provide an additional level of engagement that is highly beneficial for SMEs.

As a result of this innovative program:

- Companies have benefited from the formation of collaborative relationships that optimise future opportunities and reduce risks inherent in the research and development process;
- Researchers have benefited from engagement in innovative, state-of-the-art projects, enhanced relationships with industry partners and end-users, and better funding prospects;
- Collaboration has been increased between research institutions and across disciplines;
- Companies have increased their understanding of their end-users or market advice; and
- End-users have benefited from working with research and commercial partners to provide solutions to identified problems and needs.

The MDPP has become the recognised portal for medical device collaboration in South Australia, with support from all relevant stakeholder groups across the state.

**Cultural Impact**

The MDPP brings together research organisations, medical device companies, and clinical end-users, each with different needs, motivations and expectations. Traditionally, the relationships among these various stakeholder groups are complex and problematic but
the MDPP has been developed specifically to address these well-recognised barriers to effective engagement.

Research organisations can find it hard to work together due to the inherent competition between institutions for research funding. The MDPP provides a non-competitive environment for research collaboration across the research partner organisations. Project workshops have involved researchers from across all three partner universities in open and stimulating discussion.

The cultures, motivations and needs existing within the research and industry sectors are very different, and as a result interaction between these groups can be problematic. In particular, the differing expectations regarding IP ownership between research organisations and companies, especially SMEs, are well known. Through the MDPP, all four research organisations involved have agreed to make no claim over IP originating during an MDPP project, providing ownership free of any encumbrance to the company involved. This is a significant departure from the usual situation in a research organisation. However, if the project leads to further R&D beyond the scope of the MDPP project, then IP arrangements between the parties are agreed prior to its commencement. By this stage, the relationship and trust between the research organisation and company have been established and negotiations proceed more smoothly.

Another cultural difference between the two sectors is in commercialisation of IP or technology transfer. Many researchers claim to have no interest in commercialisation of their work since their research performance is judged in terms of grant funding awarded and journal papers published, rather than commercial outcomes. Furthermore, researchers are often unaware of the opportunities for application of their technologies to industry. However, through the MDPP, researchers have clearly demonstrated that, given the right support, they are interested in engaging with companies and that they are happy to consider new applications for their research.
Companies also have changed their attitude to working with research organisations, as evidenced by the large number of company approaches to the MDPP. This is thought to be a result of the clear and transparent model for engagement via a single point-of-contact, the access to multi-disciplinary research expertise and unencumbered IP, and the significant leveraging of company investment.

The Essence of Collaboration

The most important factor in establishing and growing a successful partnership is trust, and transparency is vital. The success of the MDPP is evidence that – given a simple and clear partnering model – traditionally competing parties are willing to engage and work together collaboratively. In establishing any kind of partnership, it is important to recognise and appreciate that different stakeholders have different needs, expectations and drivers. Managing these factors will help ensure the partnership is beneficial for all parties involved which will in turn go a long way in ensuring it is successful. The clear message from the MDPP is that, given the right opportunity and a transparent and effective model for engagement, barriers to collaboration and innovation can be overcome. However, these kinds of activities cannot occur without support.

The MDPP was structured to address the issues highlighted above, by providing a market-driven model for research that develops links with industry from the outset, identifying opportunities for industry and researchers to work together to achieve mutual benefits and providing guidance and assistance through the commercialisation pathway. The level of interest shown by industry is attributable to reducing risk in the innovation process for commercial partners, in-kind leveraging due to mutually beneficial interactions and the substantial value through expertise added by MDPP partners. The MDPP provides an avenue for companies to explore opportunities for innovation at low cost and risk to their company. Obstacles to effective research/industry collaboration have been overcome through a transparent approach focused on building relationships.

Winning the B/HERT Award

The external recognition from B/HERT has confirmed the strength of the Program and has assisted the MDPP to build a profile and position themselves as an important player in the medical device development process.

B/HERT Take-out

A well-structured collaboration can itself become the formal entry point in assisting organisations such as SMEs in accessing skills, knowledge and resources that they may not have in-house. Combining a service provider model with a market-driven approach can reduce any inherent competitiveness and cultural differences that may exist between partnering organisations.

Universities and business (both large and small) and government can partner effectively if the operational framework is well designed.

Professor Karen Reynolds is Director of the Medical Device Research Institute (MDRI) and the Medical Device Partnering Program (MDPP) as well as Deputy Dean of the School of Computer Science, Engineering and Mathematics at Flinders University. Bridging the divide between research and industry, Karen is considered as one of Australia’s leading researchers in biomedical engineering and has been recognised for her outstanding contributions, named South Australian Scientist of the Year 2012, elected Fellow of the Australian Academy of Technological Sciences (2011), and awarded Australian Professional Engineer of the Year (2010).
The Partnership

The partnership was formed by Horwood Bagshaw placing an advertisement in the local newspaper *(The Advertiser)* for the position of Manager of Research and Development. In applying and interviewing for the position the idea of a linkage with UniSA was broached. This resulted in the Business Development staff at UniSA to propose a contract for services on an hourly paid basis. For the first six months the position was full time in the company and then went to four days per week for the next six months. For about the next 10 years employment was approximately three days per week in the company. UniSA proposed annual contracts for services on an hourly basis and invoiced Horwood Bagshaw on a monthly basis with a list of activities undertaken.

Strength of Relationship

Horwood Bagshaw had a need for expert engineering advice to assist with the design of their equipment. With expertise and a background in agricultural machinery research (tillage and seeding tool design), this was a good way of having industry adopt the findings of this research into machines that farmers could buy. Later on through a teaching academic position, industry experience was brought into the classroom.

The partnership evolved over time with annual contracts for the continuation of the joint relationship. The contract nature of the relationship allowed the work-load to go up and down with the industry sales. Other aspects of the agricultural industry opened up through activities in the rest of the week (teaching, research, administration, student supervision, consultancy and expert witness).

Overview

The Agricultural Machinery Research and Design Centre’s mechanical engineering research and development expertise has continued to be used to develop new products for agricultural machinery manufacturer Horwood Bagshaw at Mannum, South Australia.

This project continues to involve Assoc. Professor John Fielke and has involved work experience students from France for 20 week periods and Mechanical Engineering students’ final year projects. The work has developed further models in their product range of:

- Quad wheeled air-seeders with capacities of up to 21 000 litres;
- Air-seeders which have the capacity to dispense liquid fertilisers as well as granular seed and fertiliser;
- A new range of Precision Seeding System (PSS) Scaribars for better placement of seed and fertiliser in the soil; and
- A new range of floating hitch Scaribars which has improved ground following ability.

The work has also led to the revision of componentry for improved performance, ease of manufacturing and assembly. The designs have been licensed for manufacture in Europe by the Norwegian company Kverneland which set up a manufacturing facility in Germany and Russia to manufacture the Horwood Bagshaw range of tillage and seeding equipment for use in Eastern Europe.
Outreach/Inclusion
The relationship is still ongoing as a consultancy for a small proportion of time. The main reason for the reduction of time is the lack of new products currently being developed. Many permutations of the tillage and seeding range were created and the company is in a more manufacturing than development mode. Sales at the moment are less than half the volumes of 10 years ago for Horwood Bagshaw and the industry; hence R&D is less of a priority at the moment.

Similar hourly paid consulting relationships with several organisations are now in place; e.g. Cavpower (local caterpillar dealer to design and certify specialist equipment) and SARDI (to develop and maintain specialist laboratory equipment).

Benefits
The outcomes of new products and documentation being developed were met, with over 108 new models of tillage and seeding equipment being developed and the range being manufactured under license by Kverneland for Eastern Europe. This project involved creating documentation for operator’s manuals and parts books that put knowledge into the books and which provided answers to product-related questions.

Cultural Impact
The partnership was very successful. About five years ago following a major downturn in the industry involvement with Horwood Bagshaw was reduced from three days per week to as low as one day per month. Assistance to Horwood Bagshaw is provided on an as needs basis in a very consultative mode rather than as a direct worker in the product development.

The Essence of Collaboration
There can be great benefits of linking academics and industry but it takes much time and priority for the academic to make it work. It also takes company patience. It was quite a juggling act to balance commitments of two organisations but the outcome is well worth it.

IP was not an issue as the relationship was one of Horwood Bagshaw owning all IP and the University was paid a fair market rate for services up front.

The benefits were the ability to bring the skills and opportunities of both organisations together to mutual advantage; and to improve products and to influence teaching.

Winning the B/HERT Award
Winning the B/HERT Award was much more beneficial for UniSA. UniSA used it to show-off how it links with industry, particularly during the period of quality reviews where UniSA was able to show its impact and industry relationship.

B/HERT Take-out
The right expertise at the right time can provide the catalyst for industry uptake of R&D. As the cycle of needs of a collaboration partner changes or matures due to internal and/or external circumstances, the relationship must be flexible and adaptable.

Associate Professor John Fielke is a researcher with the Barbara Hardy Institute and Associate Head, Teaching and Learning in the School of Engineering at the University of South Australia, Mawson Lakes campus. John has a BEng (Mechanical), MESc(Agricultural Engineering) and a PhD (Soil Science). John has received $7.4 million in grants and undertaken 42 design consultancies and 13 expert witness reports on machine failures. John currently teaches engineering drawing, CAD/CAM and mechanical design plus he supervises 5 PhD candidates.
Overview

In its infancy, the relationship between Sunraysia Institute of TAFE (SuniTAFE) and Iluka was likened to David and Goliath! How could such a small regional training provider with little mining experience meet the demands of the world’s biggest mineral sands mine? Indeed it did, and a truly collaborative relationship was built based on mutual respect, trust, responsiveness, professional and customised service and effective communication. SuniTAFE proved an invaluable ally in supporting the new mining venture near Ouyen, flexibly and proactively meeting Iluka workforce and regulatory needs as they faced various hurdles in establishing the mine. Iluka willingly shared its vast mining experience and industry knowledge to ensure the training provided was best practice in a true partnership arrangement, innovative by nature and design.

The Partnership

The partnership between SuniTAFE and Iluka Resources Ltd – Kulwin Mineral Sands Mine (Iluka) was formed soon after public presentations by Iluka management staff in the lead-up to the construction of a new mineral sands mine near the small rural community of Ouyen in north west Victoria. During these presentations and resultant discussions it became apparent that a total business solution was required by the mine operators to meet their range of demands and project targets. Their needs were complex and comprehensive and included developing a local workforce that would operate safely, efficiently and effectively in order to provide a pool of appropriately skilled workers in a range of suitable qualifications and credentials.

SuniTAFE senior and operational staff were present at the initial information sessions and community briefings to not only identify key players and foster a relationship with Iluka but to understand their unique requirements and, in turn, the Institute’s capacity to support this new venture. SuniTAFE noted the breadth and depth of the skills and other requirements of Iluka prior to commencing the operations of the mineral sands mine.

Strength of Relationship

The process of collaborative engagement occurred through a range of communication methods from face-to-face meetings in Ouyen, via electronic means e.g. email, telephone and on-site visits and tours to Kulwin and Hamilton. SuniTAFE has a Client Relationship Management (CRM) system that supports a range of ‘touch-point’ communications to occur across both businesses and all the while sharing dialogue, business needs and actions that occur as a result.

Whilst SuniTAFE maintain this client account management focus, over time representation from the Institute adapted to reflect the demands of Iluka in a multi-layered relationship approach. Both SuniTAFE and Iluka representation changed with the usual staff turnover, but the various functional levels of contact have been maintained from management to on-ground staff.

The local Mallee Campus of SuniTAFE has proven to be a mainstay and focus for many Iluka operational and management team meetings and professional development programs and through ongoing email (direct marketing) contact of new and regular programs. The Campus Coordinator has provided...
excellent customer service for over four years to meet their demands to this day, often at short notice.

The relationship has been maintained irrespective of new mine developments at neighbouring locations and the transition of staff, recruitment of new staff and new skills demands e.g. ICT.

Outreach/Inclusion

A large proportion of the Kulwin Mine processing personnel were recruited from the local region with limited or no mining experience or knowledge of the industry. Training was required immediately as well as the standard industry practice of spreading the training liability over two to three years. This added to the enormity of the challenge.

The collaboration has been maintained over time. However, competition from other providers, specialty offerings, new demands not able to be met by current SuniTAFE trainers e.g. new OHS laws and other legislative changes requiring up-skilling of current staff has limited the collaboration at times. New partnerships, regular communication, site visits to the mine and processing plant at Hamilton have sustained the collaboration over time providing ongoing training initiatives and service provision.

The Iluka experience has enabled the Institute to develop further relationships in the mining sector. The collaborations have not been as enduring or broad ranging as the Iluka involvement but nevertheless achievements have been realised.

Benefits

The magnitude of the project was not an obstacle because of the potential this business would bring to the region and to the business of service providers, including SuniTAFE, through the need for a highly skilled workforce to support its success. However, never before had SuniTAFE collaborated in such a holistic way that would stretch beyond standard training provision into a solutions focussed service provider.

SuniTAFE was able to provide best practice commercial service provision to Iluka in order to enable a successful mine-site operational start-up and meet their initial employment needs and contractual obligations e.g. Indigenous employment, apprenticeships, traineeships, OHS, first aid etc. The partnership was formed to support this regional economic development initiative but also to provide an ongoing revenue stream to the Institute as it provided a range of training products and services.

SuniTAFE and Iluka staff worked together to create a pre-employment Indigenous training program to support local Indigenous people in job applications through the acquisition of basic skills and knowledge of Iluka specific policies and practices.

Over time the demands of Iluka have lessened from the initial peak skills demand period. However, there is regular contact and service provision for Iluka and a range of staff including management and trainers has provided new and ongoing training opportunities for SuniTAFE.

The benefits of this partnership have been realised in a range of areas e.g. experience gained in a new industry, participation in an exciting regional economic development initiative, the development of new business acquaintances and, of course, commercial revenue. It has been a great learning opportunity for staff to become familiar and confident in a new, largely unfamiliar industry.

Cultural Impact

The partnership worked from the outset due to the pressing needs of Iluka and their demands for diversity of training and a broad range of skills in a limited timeframe. SuniTAFE staff were prepared to acquire an understanding of the mineral sands industry and mining in general, Iluka’s internal culture, policies and processes and ensure internal systems and personnel were in place and at the ready for immediate response. Administrative support, refreshments, local knowledge and ICT technology were all part of the response.

SuniTAFE was flexible, accommodating and able to meet the changing nature of the mine even during construction delays out of their control.

The partnership has not fundamentally changed. However, varying demands of Iluka as the mine has matured and relocated, and the availability of highly specialised mining training providers has provided Iluka with other training demands and delivery options. At times the partnership has been ‘resurrected’ but was not conducive to realising the true potential of the partnership because of less than optimal responsiveness or flexibility, lack of capacity and inefficient internal communication. Overall though, the partnership has been maintained over several years now given the slower pace of training demand and the benefits of long-term training provision and service.

Iluka staff with mining experience were also provided with skills development as trainers and assessors to work in partnership with education units at the Institute. SuniTAFE provided training knowledge, resources and quality assurance to ensure any on-site training was compliant with nationally accredited standards and of high quality.

The Essence of Collaboration

It is important to understand the business and the industry sector with which you seek a long-lasting relationship in order to meet their needs. Identify these needs, listen and gather background knowledge to engage meaningfully and maturely with the organisation. Regular and effective communication, both formal and informal, honesty and mutual trust is important in developing and maintaining a sustainable collaboration and in order to be “in the loop” with new initiatives.

For SuniTAFE, CRM has been a great tool in documenting activities and dialogue, key people and contact details over time. Be flexible, responsive and proactive, and prepared to develop a range of connections with the business and maintain regular ongoing contact.
Those who engage with the partner organisation need to meet the expectations of the organisation with respect to levels of customer service and relevant offerings. A system of continuous improvement where the products and services provided are evaluated and improved also supports the partnership.

Contextualise offerings, learn, adapt and implement what is required to meet their business objectives and operations. Be prepared to meet a range of needs not just core business e.g. SuniTAFE initially provided training, space, accommodation, meals, administrative support, English language support etc. and brought together a range of staff with specialised skills and functions.

It is also important to maintain integrity and confidentiality where appropriate and to provide a key contact for complaints or issues if they arise.

**Winning the B/HERT Award**

The B/HERT Award was great acknowledgement of a large corporation and a small training provider working effectively together to enable the success of a new mining venture in the region. Initially the PR potential and sense of collaboration was strong. However, new staff engaged in both organisations who did not experience the initial build phase, enormity and urgency of developing and maintaining a productive partnership have probably not realised the impact of the B/HERT award at that time. From a public relations perspective the B/HERT award has been influential and engaging for all concerned.

**B/HERT Take-out**

When opportunities present themselves don’t let the scale and unique requirements of the project be obstructive. A multi-layered relationship with comprehensive needs can promote organisational capacity building e.g. continuous improvement and amplify initial successes e.g. regional workforce and economic development.

Embed project strengths and achievements throughout each partner’s organisation and ensure the project outlasts staff turnover.

**Jenny Grigg** is Director Business Development at Sunraysia Institute of TAFE and responsible for Sales, Marketing, International Students, Training Farm and three Rural Campuses in the Victorian Sunraysia/Mallee.

She holds a BA (Economics and Politics), MBA and graduate of the Australian Institute of Company Directors and a life-long learning advocate.

She is a Churchill Fellow researching the Cooperative movement in USA, Canada and Ireland for community development.

Jenny has extensive Board experience is currently Deputy Chair of Mildura Development Corporation and very excited about the future of the Sunraysia/Mallee region.
Overview

The Young Essentials Project (YEP) was originally developed by RMIT University and Jockey Australia in 1998 to complement the Product Development and Merchandising studies conducted at RMIT’s Brunswick Campus.

Under industrial guidance, students are provided with or asked to develop a product brief — one that offers innovative product development to complement the brand’s (national) product portfolio.

The Partnership

Now in its 14th year, YEP is founded on the belief that with close integration and communication between industry and educational partners, a focused and relevant education can be provided with substantial commercial and academic benefits.

YEP is designed to provide students with practical industry training and experience in all facets of product development; and to provide those industry partners participating in the program with innovative product designs from students.

Strength of Relationship

The YEP experience has produced commerce-ready graduates combined with the academic rigor needed for further study into the degree program.

Accordingly, the success of YEP has assisted in the strengthening of relationships between industry and academia whilst providing students with leading edge educational experiences.

Today, the strength of the partnership has developed to a level where industrial partners are actively involved in providing students with a range of training experiences to assist RMIT in the joint delivery of its teaching curriculum. To this end, RMIT provides mentors for the student companies (groups) to guide and assist the students through the stages of product development.

Educationally, the success of YEP demonstrates to educational institutions nationally the rich benefits that can result by challenging conventional teaching methods. Students can be provided with a more complete educational experience and graduate with an intimate knowledge of industry workings, quality levels required and benchmark standards.

Outreach/Inclusion

RMIT’s School of Fashion and Textiles has again attracted leading Australian companies to participate in the Young Essentials Project. The 2013 industry partners are Sportsgirl, Country Road and Myer.

Benefits

Since its inception, a great number of students have moved into key product development and marketing roles in industry.
Under the semblance of a fully functional company, the students consider the following attributes and commercial realities in progressing the brief to market readiness:

- Market research and consumer preference testing;
- Strategic marketing;
- Product range specification;
- Style development;
- Development of final product specification;
- Product costing analysis;
- Design board layouts; and
- Presentation of product, merchandising analysis and marketing.

To ensure the complete product development process is understood and experienced by students a series of presentations occur. The presentation of comprehensive product development and merchandising clearly highlights the quality standards achieved during the development of products and the premise used for all decisions. The clear and concise presentation of this information is evidence to the marketplace that the students are equipped to offer innovative and commercially viable product to retail fashion brands.

The YEP program allows students to develop a detailed and commercial knowledge of product development not only through active industry participation but also through understanding ‘supply chain management’. The use of innovative and leading edge teaching delivery methods i.e. moving from text book-based learning to collaborative industry participation has been paramount to the improvement of both the internal operations of RMIT and the commercial operations of a TCF fashion enterprise.

Students have developed products for a range of companies, which have had commercial success. Further to the commercial success of YEP, the program has contributed to the placement of numerous graduates within middle management ranks of companies including securing the positions of:

- Production;
- Marketing;
- Product Development;
- Quality Assurance; and
- Visual Merchandising.

Cultural Impact

Culturally, industry and academia have long had differences in modes of operation. YEP, through industrial partnerships has challenged these cultural differences and demonstrated that by combining the resources of both industry and academia, the end result is richer than that which can be achieved by either participant independently.

The Essence of Collaboration

The main challenge of the project was to develop appropriate strategies of engagement between the university, industry and student. This included key timelines that met the external demands of all participants and the development and understanding of an appropriate educational pedagogy for all key stakeholders.

The main benefits not only included the direct involvement of current industry practice but it is also an opportunity for industry partners and RMIT teaching staff to review, engage and reflect within their current practice.

Winning the B/HERT Award

Winning the B/HERT Award gave recognition to RMIT University and industry partners for their participation in this project. For RMIT University this acknowledgement has assisted us in promoting the value of this project to future industry partners.

Grant Emerson is a Program Director and the Chair of Learning and Teaching in the School of Fashion & Textiles within the College of Design and Social Context at RMIT University in Melbourne, Australia. Grant has worked in the education sector for over twenty years. His industry and teaching background includes business management, marketing and logistics. In his role as Chair of Teaching and Learning, Grant has overseen the development of graduate capabilities in sustainability. Research interests include embedding sustainability within the curriculum, work integrated learning approaches and determining the impact of blended learning in learning, teaching and assessment strategies.
Overview

By the late 1980s several Australian universities that had previously provided coursework and research in the field of special education for children with sensory disabilities had ceased to operate those programs. It was in the context of this diminishing provision of professional training and research initiatives that the Royal Institute for Deaf and Blind Children (RIDBC) resolved to create a Centre for professional education and research that would ensure that Australian teachers and allied professionals working in the field of sensory disability were able to undertake postgraduate educational programs of high quality and sufficient depth.

The principal benefit of the collaboration has been the very significant contribution that has been made to the quality of professional capability for delivering educational and related services for children with sensory disabilities in Australia and internationally.

Overall, since 1991, the Centre’s small staff have accounted for the production of more than 450 international and national conference papers, journal articles, book chapters, books, and monographs. Importantly, there have been six doctoral completions through the Centre with an additional seven research higher degree students currently in progress.

The Partnership

Other universities were operating programs with skeleton staffing levels that precluded staff from engaging in research or other scholarly activities to develop the field. In 1990, RIDBC sought discussions with several universities to explore the possibility of a collaborative arrangement to rectify the situation.

The collaboration between RIDBC and the University of Newcastle was initiated in response to objectives that were clearly articulated by RIDBC prior to the first discussions occurring between the two institutions. Namely: (a) to provide access to the highest possible quality initial and continuing professional training in the delivery of educational and related services to children with sensory disabilities, and (b) to underpin this training and general professional endeavour with a program of applied research and resource development.

Strength of Relationship

By a considerable margin, the response from the University of Newcastle was the most positive and encouraging and quickly led to more formal discussions regarding affiliation and ultimately the joint administration of a centre for professional education and research. The strength of initial commitment from the University of Newcastle was, in no small measure, attributable to the enthusiastic support received from the (then) director of the University’s Special Education Centre (later the Dean of Education), Professor Phil Foreman and (then) Deputy Vice-Chancellor, the late Professor Michael Carter.

The relationship between the two institutions was formally acknowledged in a Memorandum of Agreement that was first signed by the Chief Executive of RIDBC and the Vice-Chancellor of the University in April 1992 and has since been renewed on several occasions.
The spirit of cooperation that has underpinned the relationship between two institutions has ensured steady advancement of the objectives of providing quality postgraduate education for professionals working with children with sensory disabilities.

The collaboration between RIDBC and the University and the associated development of opportunities and achievement of outcomes continue unabated.

**Outreach/Inclusion**

The Centre currently holds, or has held, formal agreements or contracts for professional training and development with governments or other agencies in four Australian states, New Zealand, Botswana, and China. In 2007, the Centre entered into an arrangement with the China Research and Rehabilitation Centre for Deaf Children (CRRCDC) and the Cochlear Foundation (Cochlear Ltd) to provide training for specialist teachers and therapists to work with deaf children across 26 locations in China.

In regard to Continuing Professional Education, the growth of the Centre has been just as dramatic. In 2012 the Centre provided more than 3,000 person-days of continuing professional education through a comprehensive program of seminars workshops and conferences. Such events are now offered through additional collaborative arrangements in Victoria (i.e. with the Victorian Institute of Deaf Education), in Western Australia (i.e. with the Western Australian Foundation for Deaf Children), in New Zealand and several locations in south-east Asia through a collaboration with Cochlear Ltd. Further, in collaboration with Cochlear Ltd, the Centre provides a series of professional development webinars for practitioners throughout the Asia-Pacific region.

As noted above, there have been numerous additional collaborations formed through the RIDBC Renwick Centre including:

- Collaborations in ARC linkage grants with the University of Western Sydney, Griffith University, and Latrobe University;
- Contractual arrangements and/or less formal agreements for the provision of training and development programs with the New South Wales Department of Education and Communities, The South Australian Department of Education and Child Development, the Victorian Institute of Deaf Education, the Western Australian Foundation for Deaf Children, the New Zealand Ministry of Education, the Department of Education of the Republic of Botswana, the China Research and Rehabilitation Centre for Deaf Children, Guide Dogs NSW/ACT, and Cochlear Limited;
- Joint research initiatives with researchers at Herriot-Watt University in Edinburgh and the National Technical Institute for the Deaf in Rochester, New York, USA;
- Formal collaborations with various other support parties through the Hearing Cooperative Research Centre (particularly with the National Acoustic Laboratories and the Sydney Cochlear Implant Centre); and
- An important developing relationship with Macquarie University in regard to involvement in the activities of the new “Australian Hearing Hub”.

**Benefits**

By any measure, the initial objectives of the collaboration between RIDBC and the University have been met and greatly exceeded.

The Renwick Centre was formed to serve three related functions: (a) professional training of teachers and related professionals who work with children with sensory disabilities through postgraduate award courses, (b) continuing education for this same group of specialized professionals, and (c) the conduct of applied research and development of resources in this field. The collaboration between RIDBC and the University of Newcastle created the largest and most comprehensive centre for professional training in special education for children with sensory disability in Australia. The collaboration effectively reversed a trend of diminishing provision of research, research training and professional education in this small but highly specialised field. Indeed, from 1987 to 1991 when the Memorandum of Agreement between RIDBC and the University of Newcastle was signed, the number of Universities offering dedicated programs in Special Education (Sensory Disability) fell from seven to just four—only one of which was offering a specialised postgraduate program in the area of vision impairment. Two more programs were in severe decline and would ultimately cease operation by 1997. In this context, the decision to develop the RIDBC Renwick Centre can be seen as a far-sighted and very timely exercise. Today the RIDBC/University of Newcastle collaboration provides the only postgraduate program in the area of special education in both vision impairment and hearing impairment in Australia. Only one other university (the University of Melbourne) offers a program in the education of deaf and hearing-impaired children.

In 2013 the RIDBC Renwick Centre reached the milestone of having 750 graduates of award-based programs (i.e., at Graduate Certificate, Master’s Degree, and Doctoral Degree levels). Those graduates are now undertaking roles as teachers of the deaf, teachers of children blind or vision impaired, Auditory-Verbal
Therapists, Orientation and Mobility Specialists or other associated professional in locations all around Australia and internationally. Graduates have come from every state of the Commonwealth and 15 other countries.

Cultural Impact

The collaboration between the partners is now a mature and highly efficient relationship. In every sense the operations of the Centre are integrated into the functions of the Faculty of Education and Arts. The conjoint members of staff continue make an important contribution to the research output and profile of the School of Education.

The essential characteristics of the relationship between RIDBC and the University of Newcastle have remained unchanged since the commencement of the collaboration in 1991. This is evidenced by the fact that Memorandum of Agreement remains largely unaltered other than to accommodate changes in nomenclature associated with modifications of the administrative structures within the two organizations.

The Essence of Collaboration

Without question the basis for any successful collaboration should be a need or an idea for which a collaborative response is patently a more effective response than an initiative by either party acting alone. The potential benefits of collaboration should be so compelling as to spur and drive the partner’s efforts to collaborate. As suggested by Victor Hugo, “there is nothing more powerful than an idea whose time has come.” The power of a good idea (i.e. the powerful logic of collaboration rather than individual action) was clearly a driver for the success of the relationship between RIDBC and the University of Newcastle. This would appear to be a necessary ingredient for successful collaboration in any field of endeavour.

There were no apparent impediments to the collaboration although clearly there were arrangements to be codified and agreements to be reached in regard to a range of matters including, for example, the sharing of income associated with full-fee paying student enrolment in courses provided through the Centre. At every stage these discussions have been amicable and have been steeped in the understanding that the collaborative efforts of the parties are directed to improving developmental and educational outcomes for children with sensory disabilities in Australia and internationally.

Winning the B/HERT Award

One of the appreciable benefits of winning the B/HERT award in 2001 was the raising of the profile of RIDBC Renwick Centre within the University community more broadly. As a relatively small enterprise and a relatively uncommon concept in collaboration within the University, the profile of the Centre was relatively low prior to the B/HERT award. As a consequence of the celebration of the achievement, many more people within the University became aware of both the collaboration and its success.

Within the Centre, the B/HERT Award continues to be proudly acknowledged in communications about its achievements and its status as an important player in the framework of higher education and research provision in Australia.

B/HERT Take-out

Collaborations need only exist if there is logic/value in the intended outcomes for all partners. High authenticity/commitment to the collaboration can facilitate sustainable benefits, not only for the collaborating partners but the community at large.

It was only through collaboration that special education programmes for children with sensory disabilities not only were saved but opportunities for growth nationally and internationally were achieved.

Greg Leigh is Director of RIDBC Renwick Centre and Conjoint Professor of Special Education at the University of Newcastle. He is a Fellow of the Australian College of Educators and currently chairs Australasian Newborn Hearing Screening Committee and the Steering Committees of both the Asia-Pacific Congress on Deafness (APCD) and the International Congress on Education of the Deaf (ICED). He has held roles at other Australian universities and as Visiting Scholar at the National Technical Institute for the Deaf in New York. He serves on the editorial boards of several international journals in education and communication sciences.
Overview

Edith Cowan University (ECU) has developed a strong partnership with Emirates Airlines to develop and deliver specialised ECU Security programs to an international market. International terrorism and trans-border organised crime represent the major security challenge for aviation stakeholders in the 21st century. Through the collaboration, ECU has positioned itself as a leading global provider of education and training to airlines, government and international organisations to assist them in combating these major issues. The partnership has been active since 2001 and has developed into the Education Academy in Dubai running ECU programs in Security Management, Aviation Security, Crisis Management and Ground Handling.

The Partnership

This initiative was taken by ECU and Emirates jointly. It was a result of an earlier B/HERT-awarded project that ECU conducted with Singapore Airlines in the 1990s. Emirates had been observing the success of that project and indicated that they would like to work with ECU on a similar project. As a result, ECU provided Emirates with an innovative proposal that differentiated this project from the earlier Singapore Airlines project.

The process used was a joint process where ECU showed the partner(s) the benefits of working in a collaborative manner. A series of workshops and focus groups were formed over a period of 12 months to determine how the partnership would work. During these focus groups, the partners identified the strengths and weaknesses in the proposal and worked towards its improvement so that it would be mutually beneficial.

Strength of Relationship

Professor Nara Srinivasan initially represented ECU. The representation has over time gained the strong support of the Vice-Chancellor Professor Kerry Cox AM, who is the main representative of the University with Emirates today.

The collaboration has deepened between the partners and is now expanded to include other partners, both government and private sector. The funding provided has also increased both in kind and cash to more than double the original amount. At present, more than 700 students have graduated from this program. Some of these students are involved in working on this partnership and in conducting research as well.

Outreach/Inclusion

As mentioned above, the program has expanded to both the private and government sectors resulting in the setting up of the ECU-Emirates Centre in Dubai.

Other relevant partners joined the project after the first two years as the project received international recognition as one that was effective in delivering on the objectives. As the social and economic relevance and success of the project became clearer, many governments wanted to be part of the project.

The airports of the future ARC project is the most significant research relationship at this stage.

PROJECT:
Enhancing Security in an Increasingly Interdependent World – A global collaboration with Emirates Airlines to serve international demand for Aviation Security Education and Training

PARTNERS:
Edith Cowan University, Emirates Group Security (Transguard), Emirates Airlines and International Civil Aviation Organisation

AWARD:
**Benefits**

Initially this project was to support the professional development needs of staff at Emirates Group through tailored and targeted educational programs. The second stage involved a major funded research project with many high profile partners. What is unique about this project is that the teaching and research components complement each other and the research drives some of the teaching material development.

The benefits of this project can be summarised as follows:

- Bringing together industry and the University so that research drives the curriculum and the curriculum stays relevant;
- Major industry experts engage with the University and provide relevance to the courses, as well as understanding that the University can bring benefits to the industry; and
- Students gain employment opportunities through such partnerships as the industry partner takes on students for placements to conduct research and complete project units. Students have the opportunity to work in a world-class and industry relevant organisation. All students who gained placement opportunities secured employment in Australia with relevant organisations.

**Cultural Impact**

The flexibility and trust that the partner organisation had in ECU proved to be the greatest asset to this project. The collaborative approach made certain that flexibility was not an issue and changes could be made in a consultative manner as and when necessary.

There were clear objectives from the outset but these are not the same objectives that remain today as they evolved and changed during the life span of the project. The collaborative nature of this project meant that both partners had to be aware of organisational and environmental changes. Reacting to these changes and being flexible to modify direction is a very important aspect of this project. As an example, the Indonesian Government’s changes to the visa requirement for certain nationals will impact the objectives of this project and the relevant parties will need to meet and adjust the direction and objectives of the project.

However, not all objectives and outcomes were met. As an example, community engagement is a major component of ECU’s purpose, as outlined in its strategic plan. Emirates also has community engagement as a major objective. This assisted in adapting the objectives of this partnership (for the better) and some objectives identified at the beginning of the project were modified.

**The Essence of Collaboration**

In our experience, long term sustainability of partnerships is often underestimated. This needs to be an important element when forming a relationship, especially between a university and industry. The benefits to both parties must be outlined and delivered. Senior management from both organisations must support the partnership and at the same time there needs to be ‘buy-in’ from all stakeholders. Internal stakeholders must be supportive and active at all stages when the project is implemented.

There were many impediments, especially in the governance of the project. Getting all stakeholders involved in the governance proved to be a major challenge. Initially a lot of time needed to be invested in explaining the benefits of the project to senior management at both organisations. After this was established, other stakeholders such as teaching and research staff needed to be convinced as to how this project would benefit them as well as the university. The ‘silo’ effect had to be overcome so that all stakeholders worked together to deliver good results and this involved major governance challenges.

**Winning the B/HERT Award**

Winning the B/HERT award provided much needed publicity and as a result the opportunity to convince this and other partners that the project was worth their time and financial investment. It also resulted in this project becoming a partner for a major ARC-funded research project. Having the Minister for Higher Education present the award at a special dinner was a catalyst in getting senior management from both organisations willing to attend this event. This is turn created additional publicity for the award and the project within Australia and globally.

**B/HERT Take-out**

A track record as a collaborator can assist in attracting new business. Relevancy/buy-in of the collaboration within an organisation must be communicated quickly and transparently. Merging of social and economic objectives can be a powerful driver in broadening the appeal of the original collaboration to prospective new partners.

**Professor Nara Srinivasan** is a criminologist who has been working in the security arena from 2000. His current professional areas of interest are aviation security, professionalisation of the security industry, corporate security and risk, security and its relationship to business, international dynamics of security and unauthorised arrival related security. Professor Nara has been invited to address these topics at several World Economic Forum events and is a member of the several United Nations expert groups on aviation security and professionalising security standards. He has built strong collaborations between higher education, various government agencies both domestic and international and private business.
The Partnership

In 2000 Ludowici had the need for technology in their portfolio for separating particles on the basis of density. They were seeking support from Professor Kevin Galvin who had done work in this area on an existing approach based on standard technology known as the Teetered Bed Separator.

Professor Galvin was looking for a partner who could commit to developing his new technology, the Reflux Classifier. The partnership formed for the express purpose of developing and commercializing the technology.

The objectives were clear from the outset, firstly for the company to support grant applications by providing a pilot scale separator. This process required collaboration on the design. Once the pilot scale performance requirements had been met, the next step involved the development of a full scale separator. This was done as part of a grant application. The clear goal was to produce a separator for the industry and commercialise the technology.

Strength of Relationship

The most important step was to establish a real commitment by a target date. Failure to meet that real commitment must bring the relationship to an immediate end. This must be made clear. It is important for the partner to be genuine. It is also crucial that the company have a clear need for the technology, and hence insure the new technology does not conflict with its existing portfolio.

The collaboration commenced in 2000 and continues to this day. The collaboration deepened in 2008 following a further research breakthrough which led to a redesign and new launch of the technology. There was enormous interest in the technology from 2008.

The original organization, Ludowici, was purchased in 2012 by FLSmidth. The Reflux Classifier was a major interest of FLSmidth in making this purchase.

Overview

This particle separation technology has now been exported to eight countries, with some 60 sales to date. The technology solves known industrial problems in the minerals industry which were previously intractable. A single unit processes perhaps $100M or more in product per annum. The benefits from a single unit can be tens of millions of dollars per annum depending on the type of application. However, the company now gains new access to projects, hence other equipment can be “bundled” delivering much larger benefits. Projects worth 15 to 50 times the value of the technology have proceeded. Our technology has been an “enabler” for the whole project to proceed. Some of these projects have been worth hundreds of millions of dollars.

When our partner, Ludowici, was sold to FLSmidth, its capitalization increased from $100M to $350M. Our technology was a key driver in the purchase of Ludowici. The Reflux Classifier has attracted national and international awards, an Australian Coal Association Research Program Research Excellence Award and the B/HERT Award.
Outreach/Inclusion

The R&D Agreement was transferred to FLSmidth when Ludowici was purchased. The original agreement still applies and is being reviewed to address weaknesses, especially in terms of the development of new technologies derived from the original platform.

Benefits

All of the objectives and outcomes were met, but not in accordance with the proposed time lines of the R&D Agreement. The first sale was in 2004. Sales targets took longer to reach. However, today, the sales targets have long been exceeded. Clearly, persistence was crucial in achieving the final success.

Cultural Impact

This collaboration proved to be a good match. Finding the right partnership, however, did take nearly two years. A number of false starts were made. But when the right company was found, the process proved straightforward with commitments made towards a grant application achieved very quickly. A formal R&D Agreement was achieved within about six months.

Establishing a relationship with new owners is not easy, particularly if there is no track record between the two parties. Consequently it is essential to try to build the new relationship. In this case this is easily done with the fully commercialized technologies but more challenging with the new technologies that sit within the portfolio. The new partners are globally more significant and hence offer the potential for far greater traction with the industry and therefore more sales and royalties.
The Essence of Collaboration

The most important element is to insure the partner has a need for the new technology in their overall portfolio. The company needs to be able to assess the opportunity relatively quickly, taking advice from an independent expert. There must be no ambiguity in their commitment. For example, it is crucial to insure the company is not simply looking to shelve the technology in order to protect their existing product line, and hence prevent their competitors from developing the technology. It is essential to obtain an early agreement of a tangible nature that supports a grant application or cash input. It is also crucial the organization assign a person to collaborate and take ownership, and hence drive the project within the partner organisation.

It is important to take great care in preparing the R&D Agreement.

It is important to address who owns the IP. In this case all ownership of IP was retained. This ownership is important at the end of the 20 year patent period, as the ownership covers Trade Marks, designs and drawings. This means there is scope for negotiation on royalties following the 20 year period. So although the Agreement and licensing arrangements were allowed to be sold on to a new owner, the retention of the IP ownership was crucial. This ownership provides a point for on-going negotiation. If there is joint ownership, then who is licensing the technology to whom? Ownership of the IP provides a basis for a continuing relationship.

Winning the B/HERT Award

Winning the B/HERT award in 2005 was very important to the career of Professor Kevin Galvin. With this recognition it was easier to attract research grants. The award also provided Ludowici with profile in this area. This award was arguably the most important of the many awards that have been won because this award provided early recognition. Most awards require complete success in the first instance.

B/HERT Take-out

The importance of finding the right partner with which to collaborate should not be underestimated.

Market opportunities and commercial imperatives should be clearly enunciated when establishing the relationship. Attention to detail in preparing agreements (e.g. R&D, IP) will assist in future-proofing the legitimacy of the relationship.

The R&D and IP arrangements were crucial to the success of the project.

Professor Kevin Galvin is the Director of the Centre for Advanced Particle Processing and Transport at the University of Newcastle. He has spent 20 years at the University following a 10 year period with BHP Research and 3 years at Imperial College where he did his PhD. Professor Galvin is a Fellow of the Australian Academy of Technological Sciences and Engineering, and received the 2012 Ian Wark Medal from the Australian Academy of Sciences. He is the inventor of the Reflux Classifier, a radical new separation technology used in mineral processing.
1. HOW WAS THE PARTNERSHIP FORMED?

1.1 Who took the initiative?

The Bus and Coach Association of NSW in conjunction with the Institute (through Prof David Hensher) at the University of Sydney and then NSW Transport Dept. saw it as a good idea.

1.2 Who represented your organisation? Did this representation change over time?

I did (Professor David Hensher) and I still do although I have delegated to the new Chair in Public Transport Professor Corinne Mulley.

1.3 What was the process used?

Sitting down initially and discussing an opportunity for improved training linked to the 1990 passenger transport act.

1.4 How much time did it take before a working partnership was in place?

Within weeks since we all knew each other.

2. WHY WAS THE PARTNERSHIP FORMED?

2.1 Teaching, research, community engagement, other?

To develop a formal non-award certificate of transport management (CTM), which is required for accreditation of a bus business.

2.2 Were there clear objectives at the outset or did they evolve?

See details in article.

3. WAS THE COLLABORATION SUCCESSFUL?

3.1 Were all objectives/outcomes met? If not, why not?

Yes – see details in article.

4. HAS THE COLLABORATION BEEN MAINTAINED OVER TIME?

Yes and still very strong.

4.1 Is the collaboration continuing now? If not, why not?

4.2 Did the collaboration deepen between the partners? If so, how? If not, why not?

4.3 Have the partnership arrangements changed?

No

4.4 Did winning the B/HERT Award make a difference to the project?

Not substantively but it did reinforce the strength and uniqueness of this partnership in this sector.

5. LESSONS LEARNED

5.1 What would you consider the most important elements in establishing a partnership with another sector?

Trust, respect, common objectives and outcomes.

5.2 Were there any impediments e.g. governance, IP sharing, logistics?

No

5.3 What would you consider the benefits?

See details in article.

5.4 Have subsequent partnerships/collaborations been developed?

Yes such as with Transport for NSW, Logistics Assoc of Australia.

PROJECT: MyScience

PARTNERS: Australian Catholic University, IBM, NSW Dept. of Education & Training, Western and Northern Sydney Regions, The University of Sydney, University of Western Sydney, ResMed and BASF


Anne Forbes, Primary Science and Technology Lecturer, Faculty of Education, Australian Catholic University

1. HOW WAS THE PARTNERSHIP FORMED?

1.1 Who took the initiative?

MyScience was conceived out of an identified need. Early in 2006, the Science Foundation for Physics at the University of Sydney convened a meeting to initiate discussion around ways for the university to provide significant support for primary science education. A project team was established comprising representatives from the Foundation (Chris Stewart and later Adam Selinger), the NSW Department of Education and Training (NSWDET) (Anne Forbes and Gerry McCloughan), and IBM (Bettina Cutler). The Australian Catholic University (ACU) also became a foundational partner when Forbes joined its staff. To date, the program has been funded by small donations and sizeable in-kind support from the four founding partners – ACU, IBM, Western Sydney Region of the NSW DET, and the Science Foundation for Physics.

1.2 Who represented your organisation? Did this representation change over time?

My organization is ACU and throughout the partnership I have continued to be the MyScience representative.
1.3 What was the process used?

The process used to recruit participating organizations has been through contacts and relationships known by individuals as they participated in and became interested in the program.

1.4 How much time did it take before a working partnership was in place?

The numbers of schools, teachers and mentors participating in MyScience increased dramatically over 2006-2008. From 2009-2013 the number of schools and organizations remained fairly constant because a lack of funding prevented scale up of delivery.

2. WHY WAS THE PARTNERSHIP FORMED?

2.1 Teaching, research, community engagement, other?

MyScience was conceived out of an identified need. Early in 2006, the Science Foundation for Physics at the University of Sydney convened a meeting to initiate discussion around ways for the university to provide significant support for primary science education.

2.2 Were there clear objectives at the outset or did they evolve?

Initially there was broad agreement to develop a primary school science and technology program that provided support through the establishment of a sustainable model of collaboration between schools, industry/business and university sectors. The aim of the program was to stimulate interest and enhance capacities of primary science teachers and students in conducting authentic scientific investigations.

The MyScience educational model was developed to provide scaffolding for the above aims and comprises:

1. Collaborative professional learning for primary teachers;
2. Clear achievement criteria;
3. Promoting and supporting scientific investigation amongst primary students;
4. Mentoring of primary students by people with science expertise; and
5. Acknowledgement and recognition of achievements.

Other keystone elements that were developed to support implementation of the program are:

- An empowering structure and support for primary teachers to effectively teach science and technology;
- Purposeful and hands-on investigating for teachers and students;
- Student interest and ownership, building from guidance to freedom to select their own areas for investigating; and
- Using science as a context for teaching and learning of literacy and numeracy.

3. WAS THE COLLABORATION SUCCESSFUL?

3.1 Were all objectives/outcomes met?

If not, why not?

Yes, the collaboration has been successful. Research findings indicate that when people come together and follow the MyScience ‘steps’ a ‘community of science practice’ (CoP) develops where stakeholders learn through participation. Participants’ views have been used to modify elements of the program, and this will continue into the future.

4. HAS THE COLLABORATION BEEN MAINTAINED OVER TIME?

4.1 Is the collaboration continuing now?

If not, why not?

MyScience continues to operate with ACU as the mainstay and Anne Forbes as the chief ‘champion’. For various reasons including: founding partners’ change in priorities, or a lack of willingness to persevere when an instant, widespread transformation was not forthcoming, or simply because a key person transferred into another position, there has only been one key person (Forbes) keeping the program ‘active’ for the past three years.

4.2 Did the collaboration deepen between the partners? If so, how? If not, why not?

Of the initial partners involved most schools have remained in the program, as has ResMed. BASF decided to do conduct its own outreach program. USYD decided to run its own version of MyScience.

4.3 Have the partnership arrangements changed?

Yes, see 4.1 and 4.2. In addition, mentors are now successfully sourced through pre-service secondary science teacher programs at both ACU and UWS. These sources are sustainable and provide many mentors each year.

4.4 Did winning the B/HERT Award make a difference to the project?

Yes, we used the prestige of winning as part of an application for funding to the Ian Potter Foundation in 2009. Consequently, MyScience was awarded $50 000 (over 2 years: 2009–2011) to develop online support materials for teachers.
5. LESSONS LEARNED

5.1 What would you consider the most important elements in establishing a partnership with another sector?

In the first instance, personal contacts, followed by a successful track record of program implementation with supporting evidence. Partnerships need to be inclusive, so that, from the beginning the needs of all organisations are incorporated.

5.2 Were there any impediments e.g. governance, IP sharing, logistics?

Yes, when a partner used a similar name ‘MyScience @...’ but did not follow the essential elements of the program, then there were real concerns as to whether the program would become less effective. In the beginning governance was performed through a Project Steering Committee comprising representatives from each founding partner. As partners left the program, so did the representatives, and even with efforts to replace them, the new people did not have the same sense of ownership, interest or enthusiasm.

5.3 What would you consider the benefits?

MyScience has evolved as an urban school-community initiative with research findings suggesting likely ‘conditions’ for success and has produced evidence of participants’ transformed understandings about the nature of science, science teaching and science learning. The school-community model underpinning MyScience provides an indication of how the initiative could be embedded in the science curriculum of both primary and secondary schools resulting in enhanced engagement, interest and learning in science.

5.4 Have subsequent partnerships/collaborations been developed?

Yes, we (ACU) are in the process of submitting a proposal for MyScience funding to the Australian Maths and Science Partnership Program (AMSP) with four educational sector partners in Sydney, NSW – CEO Broken Bay, CEO Sydney, CEO Parramatta, NSW DEC. ACU, through its Equity Pathways Program has expanded MyScience into Goulburn, Temora, Brisbane and Melbourne.

In addition, seed grant funding has been awarded to the Professional Teachers’ Council of NSW by AusAid for a pilot to trial the combined implementation of MyScience with the Global Education Project NSW = Global Education + MyScience or ‘GEMS’. This project is to be trialled in 2013 in 2 schools – one in Armidale and one Sydney. If successful, Global Education perspectives could underpin the class theme around which students generate questions that they are interested in investigating scientifically.

5.4.1 How was the partnership formed?

1.1 Who took the initiative?

Impressed by a 2006 Queensland University of Technology (QUT) landscape architecture student design project run by Assoc. Professor Glenn Thomas, Sue Sargent of the Burnett Mary Regional Group (BMRG) approached Professor Thomas with a proposal for a similar project partnering with her organisation.

1.2 Who represented your organisation? Did this representation change over time?

Initially Professor Thomas represented QUT School of Design until his retirement in 2007, when Lecturer Shannon Satherley took over as the QUT School of Design representative, with Dr Les Dawes representing the School of Urban Development.

1.3 What was the process used?

Burnett Mary Regional Group brought further regional partners into the initial 2007 project, Bargara Pasturage Reserve: Burnett Shire Council, Wetland Care Australia, and Landcare Australia. The success of this project prompted Shannon Satherley to seek to continue the partnership with BMRG, and Sue Sargent introduced the QUT representatives to Brad Kitchen and Rick Morton of the Port of Brisbane Corporation (PBC). Together we completed a further successful project in the...
2. WHY WAS THE PARTNERSHIP FORMED?

2.1 Teaching, research, community engagement, other?

Each project partner was in some way involved with the planning, design and/or management of coastal settlements, recognising them as complex natural, cultural, economic and social systems requiring holistic and customised approaches. We all believe that communities need to be involved in the creation of solutions to the challenges they face, rather than the more narrowly focused solutions offered by standard consultancies. We formed a partnership between the university, private and public sectors to facilitate such community engagement.

The education of future design and engineering professionals is a high national and regional priority, and QUT has a strong focus on ‘real world’ teaching and learning, offering students the highest possible standard of educational experience. The QUT staff sought to engage with partners willing to contribute to research concerning the practice and benefits of real world learning, including improving delivery of high quality experiences and design outputs for both students and communities.

2.2 Were there clear objectives at the outset or did they evolve?

Right from the beginning, QUT, BMRG and PCB shared a commitment to ensuring the quality of both the engagement process as well as the outcomes: all partners should contribute throughout the life of a project, and all partners should benefit from the project. We shared an active commitment to encouraging communities to feel as invested in contributing to student education as students would feel invested in the delivery of high quality design and engineering outcomes to that community.

3. WAS THE COLLABORATION SUCCESSFUL?

3.1 Were all objectives/outcomes met? If not, why not?

All our objectives were met, and indeed exceeded. Public and private sector partners discovered the extra benefit of a university project as a means to build trust between themselves and communities they operate within. These projects succeeded in drawing on the unique knowledge and skills of all parties, as well as benefitting all, which was our overarching, philosophical objective.

3.2 Did winning the B/HERT Award make a difference to the project?

Winning the B/HERT Award reflected back to all three partners the value of our collaboration, leading to the agreement to undertake the 2010 project: A Tale of Two Marinas: Burnett Heads and Port of Bundaberg.

4. HAS THE COLLABORATION BEEN MAINTAINED OVER TIME?

4.1 Is the collaboration continuing now? If not, why not?

The collaboration is not currently active

4.2 Did the collaboration deepen between the partners? If so how? If not, why not?

The collaboration between QUT, BMRG, and PBC did deepen through the experience of working together. Each partner has a specific expertise base, and coupled this from the start with an interest in learning from one another. For example, PCB and BMRG developed a greater understanding of tertiary design and engineering pedagogy, while QUT staff and students developed a deeper understanding of the complexities at the real world interface of natural and commercial environmental management, and the challenges of addressing these within the realm of real coastal communities. The deepening of our relationship was evidenced in the growing confidence each partner demonstrated in communicating with students and communities from a base of shared values and pooled knowledge and skills.

As a testament to the deepening of this collaboration, QUT, BMRG, and PCB chose to undertake a third successful project in the Wide Bay-Burnett region in 2010: A Tale of Two Marinas: Burnett Heads and Port of Bundaberg.

4.3 Have the partnership arrangements changed? n/a

4.4 Did winning the B/HERT Award change the project?

Winning the B/HERT Award reflected back to all three partners the value of our collaboration, leading to the agreement to undertake the 2010 project: A Tale of Two Marinas: Burnett Heads and Port of Bundaberg. PBC valued the relationship highly enough to ensure that this project
agreement was honoured by the new Port of Bundaberg management, Gladstone Ports Corporation (GPC), when PBC was dissolved in 2009-10. GPC was keen to participate in an award-winning partnership.

5. LESSONS LEARNED

5.1 What would you consider the most important elements in establishing a partnership with another sector?

a) Ensuring a partnership always contains more than two partners to avoid university student-related projects devolving into just two-way commercial style consultancies.

b) Clear communication before any agreements are reached of:
   - Each sector’s values, priorities, goals, expectations, limitations, and timelines;
   - What each potential partner is willing and genuinely able to contribute to the partnership, and what they each hope to gain from it;
   - The ability of each partner to absorb the possible failure of any or all aspects of a project.

c) The development and maintenance of the partnership requires the establishment of:
   - Personal working relationships amongst key individuals in each partner organisation;
   - Clear, agreed communication protocols amongst partners via the key individuals;
   - A pre-emptive transition strategy when any of the key individuals are to depart an organisation.

5.2 Were there any impediments e.g. governance, IP sharing, logistics?

The only impediment this partnership needed to address was the negotiation of our different operational timelines. As the relationship evolved we became more familiar with each other’s annual industry cycles, corporate cultures and priorities. For example, it was challenging for the other sectors to appreciate the deadlines and restrictions of working within the framework of university semesters and undergraduate curricula.

5.3 What would you consider the benefits?

The benefits of establishing a partnership with another sector are almost too many to list. Overall, engagement with other sectors affords the gaining of new perspectives and access to new knowledge and practices which enrich one’s own knowledge and practice.

Some of the specific benefits gained through our particular partnership model for the university include the experience for students, and to a lesser extent staff, in the application of knowledge and skills in real, rather than simulated settings, and to real issues and people. We benefited from exposure to the expert technical knowledge of industry and the more ephemeral forms of knowledge in the community sector. Through reflective practice across projects we were able to develop a best practice model for design and engineering education through community engagement, with strong applicability in other domains of tertiary education.

5.4 Have subsequent partnerships/collaborations been developed?

Yes. Based on the success of this partnership, QUT Schools of Design and Urban Development established long-term partnerships with a further six public and private sector partners and undertook a further four major projects. These included two projects in the far north Queensland Shire of Carpentaria: Linking Karumba: Creating Sustainable Connections in 2008, and Get EnGulfed: Normanton 2020 in 2010.

The private and public sector partners gained exposure to new knowledge based on university research and practice, and cutting edge and experimental design and engineering approaches. Partners were able to view issues through each other’s eyes without bias, opening up new levels of understanding and communication between sectors.

This partnership’s focus on enriching both engagement processes and outcomes engendered a positive shift in the thinking and practice of all partner organisations regarding how we interface with other sectors and with local communities.
1. HOW WAS THE PARTNERSHIP FORMED?

1.1 Who took the initiative?

The MDPP was developed by Flinders University in response to difficulties encountered in partnering with companies on medical device research projects. The model was designed to address problems in collaborating with SMEs through a transparent approach focused on building relationships.

1.2 Who represented your organisation? Did this representation change over time?

Established in South Australia, the MDPP is a partnership of 16 supporting organisations from research, government and commercialisation sectors in South Australia. Partners include:

Research: All three publicly-funded South Australian Universities (namely Flinders University, University of South Australia and the University of Adelaide) plus disability research organisation NovitaTech are involved in the Program and have been from the beginning. Each research partner brings multi-disciplinary research expertise in medical devices and access to state-of-the-art facilities for product development and testing.

Government: The MDPP is supported by government organisations including Department for Manufacturing, Innovation, Trade, Resources and Energy (DMITRE), Department of Further Education, Employment, Science and Technology (DFEEST), Department for Communities and Social Inclusion (DCSI) and the Office for the Ageing (OFTA). These organisations provide strategic advice to the program, and access to existing programs and services that align to medical device research, product development and end-user engagement.

Commercialisation: expertise and advice to MDPP projects is provided by Flinders Partners, BioSA and Commercialisation Australia.

1.3 What was the process used?

Flinders University initiated a consultative discussion with stakeholders from within South Australia’s medical device industry. A collaborative bid was put forward to the PSRF, with co-contributions (monetary and in-kind) by all 16 partners. Since the initial PSRF funding, MDPP has attracted continued investment.

1.4 How much time did it take before a working partnership was in place?

The initial Expression of Interest for funding took three weeks to complete. Within six-months from notification of funding, the MDPP was launched.

2. WHY WAS THE PARTNERSHIP FORMED?

2.1 Teaching, research, community engagement, other?

The MDPP was developed to foster greater engagement and collaboration by addressing the well-recognised barriers to engagement between research organisations and industry, namely; different motivations, needs, and cultures; no single entry point for engagement; and differing expectations regarding intellectual property (IP) ownership resulting in technology transfer challenges.

2.2 Were there clear objectives at the outset or did they evolve?

The aim of the MDPP is to provide a model for medical device collaboration that streamlines and accelerates the research and development process and engages stakeholders more widely. The objectives for the MDPP have been clear from the start and given the high level of interest in the Program and positive outcomes achieved; there has been no need or reason to change these.

3. WAS THE COLLABORATION SUCCESSFUL?

3.1 Were all objectives/outcomes met? If not, why not?

By offering up to 250 hours of coordinated assistance to accepted projects that demonstrate market potential, the MDPP removes barriers between stakeholders and provides a space for ideation and innovation. The short projects provide opportunities for those involved to establish trust and common ground, and a basis for future funding or investment.

For example, some of our projects have resulted in ARC Linkage grants and funding for PhD Scholarship to undertake further research which would not have occurred without the initial 250hr project. This is a great outcome for both industry and the research organisations. In addition to undertaking project work, the MDPP holds quarterly ‘industry breakfast events’ whereby members of the medical device community are invited to network and learn from relevant speakers. These events are hugely successful and provide an additional level of engagement that is highly beneficial for SMEs.
companies, and provided practical assistance to take medical device ideas closer to the market. The success and outcomes achieved through the Program have far exceeded our initial expectations and aspirations, with more than 100 companies having benefited from involvement in the Program to date. In addition to this, the MDPP has:

- Increased linkages between research organisations and SMEs;
- Created a non-competitive environment for research collaboration across the SA research institutions; and
- Established an active network of all relevant stakeholder groups providing support for industry growth.

Specific achievements include:

- 18 new prototype medical devices designed, developed and constructed;
- 23 proof-of-concept/validation studies undertaken;
- a further 30 companies provided with expert technical consultation and advice;
- 37 companies provided with input and feedback from end-users or market advice; and
- 54 introductions/linkages made for product commercialisation.

The success of the model is underlined by the South Australian Government’s continued commitment to support the program through to 2016.

4. HAS THE COLLABORATION BEEN MAINTAINED OVER TIME?

4.1 Is the collaboration continuing now?

If not, why not?

The MDPP was initially funded from 2008–2011, however, due to increased interest and the success of the Program, the MDPP has attracted additional investment from State Government to continue.

4.2 Did the collaboration deepen between the partners? If so, how? If not, why not?

Since the MDPP was launched, the level of involvement from key partners and other organisations has strengthened. MDPP partners have continued to meet regularly to discuss and assess MDPP project opportunities and to identify relevant researchers and facilities for each project from across the partner network. New partners have come on board and the level of collaboration between Universities has strengthened. The number of companies approaching the MDPP continues to rise steadily, and the MDPP network has grown substantially. Facilitated by our regular MDPP networking events, we have witnessed an increased level of engagement within the medical device industry. The MDPP has established itself as the portal within South Australia for co-ordinating medical device collaboration activities, and there has been increasing interest from interstate and overseas.

4.3 Have the partnership arrangements changed?

The level of collaboration between partners has strengthened throughout the life of the MDPP, with new partners now involved. Since the launch of the Program, the MDPP has introduced a service provider initiative to facilitate the flow of information and assist industry clients to gain greater access to relevant resources and expertise.

4.4 Did winning the B/HER T Award make a difference to the project?

The external recognition from B/HER T has confirmed the strength of the Program and has assisted us to build our profile and position ourselves as an important player in the medical device development process.

5. LESSONS LEARNED

5.1 What would you consider the most important elements in establishing a partnership with another sector?

The most important factor in establishing and growing a successful partnership is trust, and transparency is vital. The success of the MDPP is evidence that – given a simple, clear partnering model – traditionally competing parties are willing to engage and work together collaboratively. In establishing any kind of partnership, it is important to recognise and appreciate that different stakeholders have different needs, expectations and drivers. Managing these factors will help ensure the partnership is beneficial for all parties involved which will in turn go a long way in ensuring it is successful. The clear message from the MDPP is that, given the right opportunity and a transparent and effective model for engagement, barriers to collaboration and innovation can be overcome. However, these kinds of activities cannot occur without support.

5.2 Were there any impediments e.g. governance, IP sharing, logistics?

The MDPP brings together research organisations, medical device companies, and clinical end-users, each with different needs, motivations and expectations. Traditionally, the relationships between these various stakeholder groups are complex and problematic, but the MDPP has been developed specifically to address these well-recognised barriers to effective engagement.

Research organisations can find it hard to work together due to the inherent competition between institutions for research funding. The MDPP provides a non-competitive environment for research collaboration across the research partner organisations. Project workshops have involved researchers from across all three
partner universities in open and stimulating discussion.

The cultures, motivations and needs existing within the research and industry sectors are very different, and as a result interaction between these groups can be problematic. In particular, the differing expectations regarding IP ownership between research organisations and companies, especially SMEs, are well known. Through the MDPP, all four research organisations involved have agreed to make no claim over IP originating during an MDPP project, providing ownership free of any encumbrance to the company involved. This is a significant departure from the usual situation in a research organisation. However, if the project leads to further R&D beyond the scope of the MDPP project, then IP arrangements between the parties are agreed prior to its commencement. By this stage, the relationship and trust between the research organisation and company have been established, and negotiations proceed more smoothly.

Another cultural difference between the two sectors is in commercialisation of IP or technology transfer. Many researchers claim to have no interest in commercialisation of their work, since their research performance is judged in terms of grant funding awarded and journal papers published, rather than commercial outcomes. Furthermore, researchers are often unaware of the opportunities for application of their technologies to industry. However, through the MDPP, researchers have clearly demonstrated that, given the right support, they are interested in engaging with companies, and that they are happy to consider new applications for their research.

Companies also have changed their attitude to working with research organisations, as evidenced by the large number of company approaches to the MDPP. This is thought to be a result of the clear and transparent model for engagement via a single point-of-contact, the access to multi-disciplinary research expertise and unencumbered IP, and the significant leveraging of company investment.

5.3 What would you consider the benefits?
The MDPP was structured to address the issues highlighted above, by providing a market-driven model for research that develops links with industry from the outset, identifying opportunities for industry and researchers to work together to achieve mutual benefits, and providing guidance and assistance through the commercialisation pathway. The level of interest shown by industry is attributable to reducing risk in the innovation process for commercial partners, in-kind leveraging due to mutually beneficial interactions, and the substantial value through expertise added by MDPP partners. The MDPP provides an avenue for companies to explore opportunities for innovation at low cost and risk to their company. Obstacles to effective research/industry collaboration have been overcome through a transparent approach focused on building relationships.

As a result of this innovative program:

- Companies have benefited from the formation of collaborative relationships that optimise future opportunities and reduce risks inherent in the research and development process;
- Researchers have benefited from engagement in innovative, state-of-the-art projects, enhanced relationships with industry partners and end-users, and better funding prospects;
- Collaboration has been increased between research institutions and across disciplines;
- Companies have shared expertise, information and equipment;
- End-users have benefited from working with research and commercial partners to provide solutions to identified problems and needs.

The MDPP has become the recognised portal for medical device collaboration in South Australia, with support from all relevant stakeholder groups across the state.

5.4 Have subsequent partnerships/collaborations been developed?

Through the rapidly increasing MDPP network, companies can access advice on innovation and commercialisation such as: product design, project management, knowledge transfer, funding opportunities, regulatory issues, and manufacturing. All companies are invited to attend quarterly networking events, which regularly attract 50-60 participants. In addition to research/industry collaborations, the MDPP has also brokered relationships between companies (who have shared knowledge, information, and equipment), and between companies and manufacturers. These outcomes would not have been possible without the initial MDPP collaboration.
my small involvement is the lack of new products currently being developed. We had created many permutations of the tillage and seeding range and the company is in a more manufacturing than development mode. Sales at the moment are less than half the volumes of 10 years ago for Horwood Bagshaw and the industry, hence R&D is less of a priority at the moment.

Winning the B/HER T Award was much more beneficial for UniSA. UniSA used it to show-off how it links with industry, particularly with the period of AUQA visits where UniSA desired to show its impact and industry relationship.

I have now committed to a full academic teaching/research position with a range of other research grants so I no longer have time to commit up to three days a week to Horwood Bagshaw. Hence, the relationship has now changed.

5. LESSONS LEARNED

There can be great benefits of linking academics and industry but it takes much time and priority for the academic to make it work along with patience of the company. It was quite a juggling act to balance commitments of two organisations but well worth being involved.

IP was not an issue as the relationship was one of Horwood Bagshaw owning all IP and the University was paid a fair market rate for my service up front.

The benefits were the ability to bring the skills and opportunities of both organisations together for mutual benefits; and to improve products and to influence teaching.

We do have similar hourly paid consulting relationships with several organisations; e.g. Cavpower (local caterpillar dealer to design and certify specialist equipment) and SARDI (to develop and maintain specialist laboratory equipment).

3. WAS THE COLLABORATION SUCCESSFUL?

The partnership was very successful. About five years ago there was a major downturn in the industry and I was asked to reduce my Horwood Bagshaw involvement from three days per week to as low as one day per month. I was still able to provide assistance to Horwood Bagshaw on an as needs basis in a very consultative mode rather than as a direct worker in the product development.

The outcomes of new products and documentation being developed were met, with over 108 new models of tillage and seeding equipment being developed and the range being manufactured under license by Kverneland for Eastern Europe. I was involved in creating documentation for operator’s manuals and parts books that put my knowledge into the books and did not rely on me answering product related questions on a daily basis.

4. HAS THE COLLABORATION BEEN MAINTAINED OVER TIME?

The relationship is still ongoing as a consultancy for a small proportion of my time. The main reason for my small involvement is the lack of new products currently being developed. We had created many permutations of the tillage and seeding range and the company is in a more manufacturing than development mode. Sales at the moment are less than half the volumes of 10 years ago for Horwood Bagshaw and the industry, hence R&D is less of a priority at the moment.
1. HOW WAS THE PARTNERSHIP FORMED?

The partnership between Sunraysia Institute of TAFE (SuniTAFE) and Iluka Resources Ltd – Kulwin Mineral Sands Mine (Iluka) was formed soon after public presentations by Iluka management staff in the lead-up to the construction of the new mineral sands mine near the small rural community of Ouyen in north west Victoria. During these presentations and resultant discussions it became apparent that a total business solution was required by the mine operators to meet their range of demands and project targets. Their needs were complex and comprehensive and included developing a local workforce that would operate safely, efficiently and to the business of service providers, including SuniTAFE, through the need for a highly skilled workforce to support its success. However, never before had SuniTAFE collaborated in such a holistic way that would stretch beyond standard training provision into a solutions focussed service provider.

1.2 Who represented your organisation? Did this representation change over time?

Initially the Director, Business Development represented the Institute but this representation broadened to the “Iluka team” which comprised relevant Education Business Managers, Mallee (Ouyen) Campus Coordinator and trainers who could provide an immediate response to the business’ needs. Whilst SuniTAFE maintain this client account management focus, over time representation from the Institute adapted to reflect the demands of Iluka in a multi-layered relationship approach. Both SuniTAFE and Iluka representation changed with the usual staff turnover, but the various functional levels of contact have been maintained from Management to on-ground staff.

The local Mallee Campus of SuniTAFE has proven to be a mainstay and focus for many Iluka operational and management team meetings and professional development programs and through ongoing email (direct marketing) contact of new and regular programs. The Campus Coordinator has provided excellent customer service for over four years to meet their demands to this day, often at short notice.

1.3 What was the process used?

The process of collaborative engagement occurred through a range of communication methods from face-to-face meetings in Ouyen, via electronic means e.g. email, telephone and on-site visits and tours to Kulwin and Hamilton. SuniTAFE has a Client Relationship Management (CRM) system that supports a range of ‘touch-point’ communications to occur across both businesses and all the while sharing dialogue, business needs and actions that occur as a result.

1.4 How much time did it take before a working partnership was in place?

The partnership worked from the outset due to the pressing needs of Iluka and their demands for diversity of training and a broad range of skills in a limited timeframe. SuniTAFE staff were prepared to acquire an understanding of the mineral sands industry and mining in general, Iluka’s internal culture, policies and processes; and ensure internal systems and personnel were in place and at the ready for immediate response.

2. WHY WAS THE PARTNERSHIP FORMED?

SuniTAFE was able to provide best practice commercial service provision to Iluka in order to enable a successful mine-site operational start-up and meet their initial employment needs and contractual obligations e.g. indigenous employment, apprenticeships, traineeships, OHS, 1st Aid etc. The partnership was formed to support this regional economic development initiative but also to provide an ongoing revenue stream to the Institute as it provided a range of training products and services.

2.1 Teaching, research, community engagement, other?

A large proportion of the Kulwin Mine processing personnel were recruited from the local region with limited or no mining experience, or knowledge of the industry. Training was required immediately as well as the standard industry practice of spreading the training liability over two to three years. This added to the enormity of the challenge.

Iluka was in need of assistance with other corporate necessities. The mine site had...
3. WASThE COLLABoRATIoN SUCCESSFUL?

The collaboration between SuniTAFE and Iluka was hugely successful. During the mine construction the local area swelled with construction crews causing Iluka operational staff to experience difficulty in gaining accommodation. All available housing, including the purpose build mining accommodation units were fully occupied. SuniTAFE expeditiously relocated the initial training to the Mildura Campus and provided on-campus accommodation and full service provision. Residence and canteen staff provided hotel type facilities for up to 35 Iluka employees – a concept new to the Institute. SuniTAFE was flexible, accommodating and able to meet the changing nature of the mine during construction delays out of their control.

3.1 Were all objectives/outcomes met?

If not, why not?
Yes, initially all objectives were met despite the changing nature of the mine development and unavoidable construction delays. The solutions approach by SuniTAFE supported Iluka’s establishment phase even when circumstances were beyond their control arose.

4. HAS THE COLLABORATION BEEN MAINTAINED OVERTIME?

The relationship has been maintained irrespective of new mine developments at neighbouring locations and the transition of staff, recruitment of new staff, new skills demands e.g. ICT. Regular meetings requiring a venue with support services, new apprenticeship arrangements and, as the mine has grown, increased output and newly approved contractors.

4.1 Is the collaboration continuing now?

If not, why not?
Yes, the collaboration continues today. Over time the demands of Iluka have lessened from the initial peak skills demand period. However, there is regular contact and service provision for Iluka and a range of staff including management and trainers, has provided new and ongoing training opportunities for SuniTAFE.

4.2 Did the collaboration deepen between the partners? If so, how? If not, why not?
The collaboration has maintained over time. However, competition from other providers, specialty offerings, new demands not able to be met by current SuniTAFE trainers e.g. new OHS laws and other legislative changes requiring up-skillling of current staff has limited the collaboration at times. New partnerships, regular communication, site visits to the mine and processing plant at Hamilton have sustained the collaboration over time providing ongoing training initiatives and service provision.

4.3 Have the partnership arrangements changed?
The partnership has not fundamentally changed. However, changing demands of Iluka and the availability of specialised mining training providers who have provided other training options, in particular as the mine has matured and shifted. At times the partnership has been ‘resurrected’ somewhat, through less than ideal responsiveness or flexibility, lack of capacity and limitations in internal communication, which was not conducive to realising the true potential of the partnership. Overall though, the partnership has been maintained in a similar fashion over several years now given the slower pace of training demand and the benefits of long-term training provision and service.

4.4 Did winning the B/HERT Award make a difference to the project?
The B/HERT Award was great acknowledgement of a large corporation and a small training provider working effectively together to enable the success of a new mining venture in the region. Initially the PR potential and sense of collaboration was strong. However, new staff engaged in both organisations who did not experience the initial build phase, enormity and urgency of developing and maintaining a productive partnership have probably not realised the impact of the B/HERT award at that time. From a public relations perspective the B/HERT award has been influential and engaging for all concerned.
5. LESSONS LEARNED

5.1 What would you consider the most important elements in establishing a partnership with another sector?

It is important to understand the business and the industry sector with which you seek a long-lasting relationship in order to meet their needs. Identify these needs, listen and gather background knowledge to engage meaningfully and maturely with the organisation. Regular and effective communication both formal and informal, honesty and mutual trust is important in developing and maintaining a sustainable collaboration and in order to be “in the loop” with new initiatives.

For SuniTAFE CRM has been a great tool in documenting activities and dialogue, key people and contact details over time. Be flexible, responsive and proactive, and prepared to develop a range of connections with the business and maintain regular ongoing contact.

Those who are engaging with the partner organisation need to meet the expectations of the organisation with respect to levels of customer service and relevant offerings. A system of continuous improvement where the products and services provided are evaluated and improved also supports the partnership.

Contextualise offerings, learn, adapt and implement what is required to meet their business objectives and operations. Be prepared to meet a range of needs not just core business e.g. SuniTAFE initially provided training, space, accommodation, meals, administrative support, English language support etc. and brought together a range of staff with specialised skills and functions.

It is also important to maintain integrity through a measure of confidentiality where appropriate and to provide a key contact for complaints or issues if they arise.

5.2 Were there any impediments e.g. governance, IP sharing?

Not that I am aware.

5.3 What would you consider the benefits?

The benefits of this partnership have been realised in a range of areas e.g. experience gained in a new industry, participation in an exciting regional economic development initiative, the development of new business acquaintances and of course, commercial revenue. It has been a great learning opportunity for staff to become familiar and confident in a new largely unfamiliar industry.

5.4 Have subsequent partnerships/collaborations been developed?

The Iluka experience has enabled the Institute to develop further relationships in the mining sector. The collaborations have not been as enduring or broad ranging as the Iluka involvement but nevertheless similar achievements have been realised.

PROJECT: Young Essentials Project 2000

PARTNERS: RMIT University and Jockey Australia

Grant Emerson, Program Director, School of Fashion & Textiles, RMIT University

The Young Essentials Project (YEP) was originally developed by RMIT University and Jockey Australia in 1998 to complement the Product Development and Merchandising studies conducted at RMIT’s Brunswick Campus.

Now in its fourteenth year, YEP is founded on the belief that with close integration and communication between industry and educational partners, a focused and relevant education can be provided with substantial commercial and academic benefits. Culturally however, industry and academia have long had differences in modes of operation. YEP, through industrial partnerships has challenged these cultural differences and demonstrated that by combining the resources of both industry and academia, the end result is richer than that which can be achieved by either participant individually.

RMIT’s School of Fashion and Textiles has again attracted leading Australian companies to participate in the Young Essentials Project. The 2013 industry partners are Sportsgirl, Country Road and Myer.

This experience has produced commerce ready graduates along with the academic rigor needed for further study into the degree program.

INDUSTRY COLLABORATION

YEP is designed to provide students with practical industry training and experience in all facets of product development to provide those industry partners participating in the program with innovative product designs from students.

Under industrial guidance, students are provided with, or asked to develop, a product brief – one that offers innovative product development to compliment the brands (national) product portfolio.
SUCCESS

Students have developed products for a range of companies, which have had commercial success. Further to the commercial success of YEP, the program has seen the placement of numerous graduates within middle management ranks of companies including securing the positions of:

- Production
- Marketing
- Product Development
- Quality Assurance
- Visual Merchandising

Accordingly, the success of YEP has assisted in the strengthening of relationships between industry and academia whilst providing students with leading edge educational experiences.

Today, the strength of the partnership has developed to a level where industrial partners are actively involved in providing students with a range of training experiences to assist RMIT in the joint delivery of its teaching curriculum. To this end, RMIT provides mentors for the student companies (groups) to guide and assist the students through the stages of product development.

EDUCATIONALLY, the success of YEP demonstrates to educational institutions nationally the rich benefits that can result by challenging conventional teaching methods. Students can be provided with a more complete educational experience and graduate with an intimate knowledge of industry workings, quality levels required and benchmark standards.

INNOVATION

Since its inception, a great number of students have moved into key product development and marketing roles in industry.

The YEP program allows students to develop a detailed and commercial knowledge of product development not only through active industry participation but also through understanding “supply chain management”. The use of innovative and leading edge teaching delivery methods, i.e. changing from text book based learning to collaborative industry participation has been paramount to the improvement of both the internal operations of RMIT and the commercial operations of a TCF fashion enterprise.

PROJECT: Renwick College (now RIDBC Renwick Centre)—Professional Training and Research in the Education of Children with Sensory Disabilities

PARTNERS: Royal Institute for Deaf and Blind Children and The University of Newcastle

AWARD: Collaboration in Education and Training (2001)

Professor Greg Leigh, Conjoint Professor & Director, RIDBC Renwick Centre, Royal Institute for Deaf and Blind Children

1. HOW WAS THE PARTNERSHIP FORMED?

1.1 Who took the initiative?

By the late 1980s several Australian universities that had previously provided coursework and research in the field of special education for children with sensory disabilities had ceased to operate those programs. Other universities were operating programs with skeleton staffing levels that precluded staff from engaging in research or other scholarly activities to develop the field. It was in the context of this diminishing provision of professional training and research initiatives that the Royal Institute for Deaf and Blind Children (RIDBC) resolved to create a Centre for professional education and research that would ensure that Australian teachers and allied professionals working in the field of sensory disability were able to undertake postgraduate educational programs of high quality and sufficient depth. In 1990, RIDBC sought discussions with several universities to explore the possibility of a collaborative arrangement to such an end.

By a considerable margin, the response from the University of Newcastle was the most positive and encouraging and quickly led to more formal discussions regarding affiliation and ultimately the joint administration of a centre for professional education and research.
The strength of initial commitment from the University of Newcastle was, in no small measure, attributable to the enthusiastic support received from the (then) director of the University's Special Education Centre (later the Dean of Education), Professor Phil Foreman and (then) Deputy Vice-Chancellor, the late Professor Michael Carter.

1.2 Who represented your organisation? Did this representation change over time?
At the time of the initial negotiations with the University, RIDBC was represented by Deputy Chief Executive, Mr John Race. At the outset of the collaboration, Mr Race assumed the position of Chairman of the Academic Board of Renwick College (now RIDBC Renwick Centre). Dr Greg Leigh (now Conjoint Professor) was appointed to lead the new collaboration in 1993 and assumed a position on the Academic Board, later becoming the Chairman. He has been the principal point of liaison between RIDBC and the University of Newcastle since that time.

1.3 What was the process used?
The relationship between the two institutions was formally acknowledged in a Memorandum of Agreement that was first signed by the Chief Executive of RIDBC and the Vice-Chancellor of the University in April 1992 and has since been renewed on several occasions. The Academic Board which oversees the work of the Centre comprises senior staff representatives of both institutions. The Chair of the joint Academic Board is Conjoint Professor Greg Leigh. The Board's membership includes the University's Deputy Vice-Chancellor, Professor Andrew Parfitt, who maintains a close interest and involvement in the work of the Centre, the Pro Vice-Chancellor (Education and Arts), the Dean of Education, and Director of the University's Special Education Centre. The spirit of cooperation that has underpinned the relationship between two Institutions has ensured steady advancement of the objectives of providing quality postgraduate education for professionals working with children with sensory disabilities.

1.4 How much time did it take before a working partnership was in place?
The strong initial commitment to the collaboration ensured that the progress from the initial conceptual discussions to the signing of the first Memorandum of Agreement was a smooth and relatively quick process.

2. WHY WAS THE PARTNERSHIP FORMED?

2.1 Teaching, research, community engagement, other?
The Renwick Centre was formed to serve three related functions: (a) professional training of teachers and related professionals who work with children with sensory disabilities through postgraduate award courses, (b) continuing education for this same group of specialized professionals, and (c) the conduct of applied research and development of resources in this field. The collaboration between RIDBC and the University of Newcastle created the largest and most comprehensive centre for professional training in special education for children with sensory disability in Australia. The collaboration effectively reversed a trend of diminishing provision of research, research training, and professional education in this small but highly specialised field. Indeed, from 1987 to 1991 when the Memorandum of Agreement between RIDBC and the University of Newcastle was signed, the number of Universities offering dedicated programs in Special Education (Sensory Disability) fell from seven to just four—only one of which was offering a specialised postgraduate program in the area of vision impairment. Two more programs were in severe decline and would ultimately cease operation by 1997. In this context, the decision to develop the RIDBC Renwick Centre can be seen as a far-sighted and very timely exercise. Today the RIDBC/University of Newcastle collaboration provides the only postgraduate program in the area of special education in both vision impairment and hearing impairment in Australia. Only one other University (the University of Melbourne) offers a program in the education of deaf and hearing-impaired children.

2.2 Were there clear objectives at the outset or did they evolve?
The collaboration between RIDBC and the University of Newcastle was initiated in response to objectives that were clearly articulated by RIDBC prior to the first discussions occurring between the two institutions. Namely: (a) to provide access to highest possible quality initial and continuing professional training in the delivery of educational and related services to children with sensory disabilities, and (b) to underpin this training and general professional endeavour with a program of applied research and resource development.

3. WAS THE COLLABORATION SUCCESSFUL?

3.1 Were all objectives/outcomes met? If not, why not?
At the time that the Renwick Centre was recognised through the B/HERT Award for Outstanding Achievement in Collaboration in Education/Training in 2001, the collaboration had yielded 92 graduates of course-work and research higher degree programs in Special Education. At that same point in time, the Centre was providing an annual average of approximately 1 000 days of in-service training through its Continuing Professional Education program. The research programs of the Centre were very much still developing.
In 2013 the RIDBC Renwick Centre reached the milestone of having 750 graduates of award-based programs (i.e., at Graduate Certificate, Master’s Degree, and Doctoral Degree levels). Those graduates are now undertaking roles as teachers of the deaf, teachers of children who are blind or vision impaired, Auditory-Verbal Therapists, Orientation and Mobility Specialists, or other associated professional in locations all around Australia and internationally. Graduates have come from come from every state of the Commonwealth and 15 other countries. The Centre currently holds, or has held, formal agreements or contracts for professional training and development with governments or other agencies in four Australian states, New Zealand, Botswana, and China. In 2007, the Centre entered into an arrangement with the China Research and Rehabilitation Centre for Deaf Children (CRRCDC) and the Cochlear Foundation (Cochlear Ltd) to provide training for specialist teachers and therapists to work with deaf children across 26 locations in China.

In regard to Continuing Professional Education, the growth of the Centre has been just as dramatic. In 2012 the Centre provided more than 3,000 person-days of continuing professional education through a comprehensive program of seminars, workshops, and conferences. Such events are now offered through additional collaborative arrangements in Victoria (i.e., in collaboration with the Victorian Institute of Deaf Education), in Western Australia (i.e., in collaboration with the Western Australian Foundation for Deaf Children), in New Zealand and in several locations in south-east Asia through a collaboration with Cochlear Ltd. Further, in collaboration with Cochlear Ltd, the Centre provides a series of professional development webinars for practitioners throughout the Asia-Pacific region.

In regard to research and research training, the Centre’s footprint and influence have also expanded. The profile of the Centre’s research personnel is high in both the national and international context. Members of the Centre’s staff hold positions on the editorial boards of the major journals in the relevant fields and are regularly called upon for media interviews, as expert witnesses for courts and government tribunals, and as consultants to government and non-government providers of services in the area of sensory disability.

The Centre has been responsible for a number of nationally and internationally significant initiatives, each of which represents an important addition to professional knowledge and resources in this field. These include, inter alia:

- The publication of a monographic series providing a vehicle for the publication of research and professional resources in the field of education for children with sensory disabilities.
- Lexicographical research and development leading to the production of Australia’s first dictionary of Australian Sign Language (Auslan) on CD-ROM. This was a project of international significance and led to the commercial availability of an important social and educational tool for language learning and ongoing linguistic research. The project also produced the most comprehensive print-based dictionary of the language ever produced in Australia and one of the best and most innovative of any sign language internationally.
- Several ARC Linkage (university and RIDBC) grants, including: a three-year project to evaluate an innovative program for the bilingual education of deaf children using Australian Sign Language (Auslan) and English as the languages of instruction; a project investigating the use of caption technology with deaf and hard of hearing adults and children (in collaboration with MARCS Auditory Research Centre at The University of Western Sydney); and currently a project to investigate the development of alternative and augmentative communicative and language systems by cochlear implant users (in collaboration with researchers at the LaTrobe University and The University of Queensland).
- The publication of the first and only comprehensive text book on the education of blind and vision-impaired students in Australia and one of only a few such publications internationally.
- Projects of international significance examining: the assessment of very early vocal production in deaf children with hearing aids and/or cochlear implants (i.e. the Infant Monitor of Production project); the impact of singing on the perception of speech by children with impaired hearing; the effects of caption rate and complexity on comprehension of closed and open captions by deaf/hard of hearing children; and the development and application of techniques for remote assessment of hearing in children in rural and remote locations (in association with the Hearing Cooperative Research Centre in which RIDBC is a support party).

Overall, since 1991, the Centre’s small staff have accounted for the production of more than 450 international and national conference papers, journal articles, book chapters, books, and monographs. Importantly, there have been six doctoral completions through the Centre with an additional seven research higher degree students currently in progress.

By any measure, the initial objectives of the collaboration between RIDBC and the University have been met and greatly exceeded expectations.
4. HAS THE COLLABORATION BEEN MAINTAINED OVER TIME?

4.1 Is the collaboration continuing now? If not, why not?

The collaboration between RIDBC and the University and the associated development of opportunities and achievement of outcomes continue unabated.

4.2 Did the collaboration deepen between the partners? If so, how? If not, why not?

The collaboration between the partners is now a mature and highly efficient relationship. In every sense the operations of the Centre are integrated into the functions of the Faculty of Education and Arts. The conjoint members of staff continue to make an important contribution to the research output and profile of the School of Education.

4.3 Have the partnership arrangements changed?

The essential characteristics of the relationship between RIDBC and the University of Newcastle have remained unchanged since the commencement of the collaboration in 1991. This is evidenced by the fact that Memorandum of Agreement remains largely unaltered other than to accommodate changes in nomenclature associated with modifications of the administrative structures within the two organizations.

4.4 Did winning the B/HERT Award make a difference to the project?

One of the appreciable benefits of winning the B/HERT award in 2001 was the raising of the profile of RIDBC Renwick Centre within the University community more broadly. As a relatively small enterprise, and a relatively uncommon concept in collaboration within the University, the profile of the Centre was relatively low prior to the B/HERT award. As a consequence of the celebration of the achievement, many more people within the University became aware of both the collaboration and its success.

Within the Centre, the B/HERT Award continues to be proudly acknowledged in communications about its achievements and its status as an important player in the framework of higher education and research provision in Australia.

5. LESSONS LEARNED

5.1 What would you consider the most important elements in establishing a partnership within another sector?

Without question the basis for any successful collaboration should be a need or an idea for which a collaborative response is patently a more effective response than an initiative by either party acting alone. The potential benefits of collaboration should be so compelling as to spur and drive the partner’s efforts to collaborate. As suggested by Victor Hugo, “there is nothing more powerful than an idea whose time has come”. The power of a good idea (i.e. the powerful logic of collaboration rather than individual action) was clearly a driver for the success of the relationship between RIDBC and the University of Newcastle. This would appear to be a necessary ingredient for successful collaboration in any field of endeavour.

5.2 Were there any impediments e.g. governance, IP sharing, logistics?

There were no apparent impediments to the collaboration although clearly there were arrangements to be codified and agreements to be reached in regard to a range of matters including, for example, the sharing of income associated with full-fee paying student enrolment in courses provided through the Centre. At every stage these discussions have been amicable and have been steeped in the understanding that the collaborative efforts of the parties are directed to improving developmental and educational outcomes for children with sensory disabilities in Australia and internationally.

5.3 What would you consider the benefits?

The principal benefit of the collaboration has been the very significant contribution that has been made to the quality of professional capability for delivering educational and related services for children with sensory disabilities in Australia and internationally.

5.4 Have subsequent partnerships/collaborations been developed?

As noted in point 3.1 above, there have been numerous additional collaborations formed through the RIDBC Renwick Centre including:

• Collaborations in ARC linkage grants with the University of Western Sydney, Griffith University, and Latrobe University;

• Contractual arrangements and/or less formal agreements for the provision of training and development programs with the New South Wales Department of Education and Communities, The South Australian Department of Education and Child Development, the Victorian Institute of Deaf Education, the Western Australian Foundation for Deaf Children, the New Zealand Ministry of Education, the Department of Education of the Republic of Botswana, the China Research and Rehabilitation Centre for Deaf Children, Guide Dogs NSW/ACT, and Cochlear Limited;

• Joint research initiatives with researchers at Herriot-Watt University in Edinburgh and the National Technical Institute for the Deaf in Rochester, New York, USA;

• Formal collaborations with various other support parties through the Hearing Cooperative Research Centre (particularly with the National Acoustic Laboratories and the Sydney Cochlear Implant Centre); and

• An important developing relationship with Macquarie University in regard to involvement in the activities of the new “Australian Hearing Hub”.

5.5 What would you consider the lessons learned?

The essential characteristics of the relationship between RIDBC and the University and the associated development of opportunities and achievement of outcomes continue unabated.

5.6 What would you consider the important player in the framework of higher education and research provision in Australia.

McMaster University in Canada; the University of Sydney, University of Western Australia, University of South Australia, the University of Queensland, and the University of Western Australia; and

• Important lesson learned about its achievements and its status as an important player in the framework of higher education and research provision in Australia.
PROJECT: Enhancing Security in an Increasingly Interdependent World – A global Collaboration with Emirates Airlines to serve international demand for Aviation Security Education and Training

PARTNERS: Edith Cowan University, Emirates Group Security (Transguard), Emirates Airlines and International Civil Aviation Organisation


Professor Nara Srinivasan, Professor of Security and Risk, Director, ECU-Emirates Centre, Edith Cowan University

1. HOW WAS THE PARTNERSHIP FORMED?

1.1 Who took the initiative?

The initiative was taken by ECU and Emirates jointly. It was a result of an earlier B/HERT-awarded project that ECU conducted with Singapore Airlines in the 1990s. Emirates had been observing the success of that project and indicated that they would like to work with ECU on a similar project. As a result, ECU provided Emirates with an innovative proposal that would differentiate this project from the earlier Singapore Airlines project.

1.2 Who represented your organisation? Did this representation change over time?

Professor Nara Srinivasan initially represented ECU. The representation has over time gained the strong support of the Vice-Chancellor Professor Kerry Cox AM, who is the main representative of the University with Emirates today.

1.3 What was the process used?

The process used was a joint collaborative process where ECU showed the partners how the partnership would work. During these focus groups, the partners identified the strengths and weaknesses in the proposal and worked towards improving the proposal so that it would be mutually beneficial.

Other relevant partners were included in the project after the first two years as the project received international recognition as one that was effective in delivering the objectives. The social and economic relevance of the project became clearer at this stage and many governments wanted to be part of the project after the initial success.

1.4 How much time did it take before a working partnership was in place?

Three years.

2. WHY WAS THE PARTNERSHIP FORMED?

2.1 Teaching, research, community engagement, other?

Initially it was to support the professional needs of staff development at Emirates Group through tailored and targeted educational programs. The second stage involved a major, funded research project with many high profile partners. What is unique about this project is that the teaching and research complement each other and the research drives some of the teaching material development.

2.2 Were there clear objectives at the outset or did they evolve?

There were clear objectives as outlined in the original B/HERT award submission but these are not the same objectives that remain today as they evolved and changed during the life span of the project. The collaborative nature of this project meant that both partners had to be aware of organisational and environmental changes. Reacting to these changes and being flexible to change direction is a very important aspect of this project. As an example, the Indonesian Government’s changes to the visa requirement for Iranian nationals will impact the objectives of this project and the relevant parties will need to meet and make changes to the direction and objectives of the project.

3. WAS THE COLLABORATION SUCCESSFUL?

3.1 Were all objectives/outcomes met?

If not, why not?

Not all objectives and outcomes were met. The reason for this is that both organisations evolved and the objectives of both organisations changed over time. As an example, community engagement is a major component of ECU’s purpose, as outlined in its strategic plan. Emirates, also has community engagement as a major objective. These assisted in changing the objectives of this partnership (for the better) and some objectives identified at the beginning of the project were exchanged for these.

This flexibility and trust that the partner organisation had in ECU proved to be the greatest asset to this project. The collaborative approach made certain that flexibility was not an issue and changes could be made as and when necessary in a consultative manner.

4. HAS THE COLLABORATION BEEN MAINTAINED OVER TIME?

4.1 Is the collaboration continuing now?

If not, why not?

Yes it is still continuing and has grown in the past few years.

4.2 Did the collaboration deepen between the partners? If so, how? If not, why not?

As indicated above the collaboration has deepened between the partners and is now expanded to include other partners, both
LESSONS LEARNED

5.1 What would you consider the most important elements in establishing a partnership with another sector?

In our experience, long term sustainability of partnerships is often underestimated and this needs to be an important element when forming a relationship, especially between a university and industry. The benefits to both parties must be outlined and delivered. Senior management from both organisations must support the partnership and at the same time there needs to be ‘buy-in’ from all stakeholders. Internal stakeholders in both areas must be supportive and active at all stages when the project is implemented.

5.2 Were there any impediments e.g. governance, IP sharing, logistics?

There were many impediments, especially in the governance of the project. Getting all stakeholders involved in the governance proved to be a major challenge. Initially a lot of time needed to be invested in explaining the benefits of the project to senior management at both organisations. After this was established, other stakeholders, such as teaching and research staff, needed to be convinced as to why and how this project would benefit them as well as the University. The ‘silo’ effect had to be overcome so that all stakeholders worked together to deliver good results and this involved major governance challenges.

5.3 What would you consider the benefits?

The benefits of this project can be summarised as follows:

- Bringing together industry and university so that research drives the curriculum and the curriculum stays relevant;
- Major industry experts engage with the university and provide relevance to the courses, as well as understanding that the university can bring benefits to the industry; and
- Students gain employment opportunities through such partnerships as the industry partner takes on students in placement to conduct research and complete project units.

5.4 Have subsequent partnerships/collaborations been developed?

Yes with additional partners as outlined above. The benefits of this project can be summarised as follows:

- Bringing together industry and university so that research drives the curriculum and the curriculum stays relevant;
- Major industry experts engage with the university and provide relevance to the courses, as well as understanding that the university can bring benefits to the industry; and
- Students gain employment opportunities through such partnerships as the industry partner takes on students in placement to conduct research and complete project units.

PROJECT: Reflux Classifier for Density and Size Separations

PARTNERS: University of Newcastle and Ludowici MPE

AWARD: Research and Development Collaboration (2005)

Professor Kevin Galvin, Director, Centre for Advanced Particle Processing and Transport, Newcastle Institute for Energy and Resources, University of Newcastle

1. HOW WAS THE PARTNERSHIP FORMED?

1.1 Who took the initiative?

1.2 Who represented your organisation? Did this representation change over time?

1.3 What was the process used?

1.4 How much time did it take before a working partnership was in place?

Ludowici, in 2000, had the need for technology in their portfolio for separating particles on the basis of density. They were seeking support from Kevin Galvin on an existing approach, based on standard technology known as the Teetered Bed Separator, as he had done work in this area.

Kevin Galvin was looking for a partner who could commit to developing his new technology, the Reflux Classifier. He had experienced problems with one company, and was ready to adopt a new company.

This proved to be a good match. Finding the right partnership, however, did take nearly two years, with a number of false starts made. But when the right company was found, the process proved straightforward, with commitments made towards a grant application achieved in just two weeks. A formal R&D Agreement was achieved within about six months.

The most important step was to force a real commitment by a target date. Failure to meet

government and private sector. The funding provided has also increased both in kind and cash to more than double the original funding. At present, more than 700 students have graduated from this program. Some of these students are involved in working on certain aspects of this partnership and in the research portion of the partnership.

4.3 Have the partnership arrangements changed?

Yes, as it now includes other partners and also resulted in the setting up of the ECU-Emirates Centre in Dubai.

4.4 Did winning the B/HER T Award make a difference to the project?

Yes, as it provided much needed publicity and as a result provided the opportunity to convince this and other partners that the project was worth their time and money investments. It also resulted in this project becoming a partner for a major ARC-funded research project. Having the Minister for Higher Education present the award at a special dinner also assisted in getting senior management from both organisations to attend this event. This turned created additional publicity for the award and the work we are engaged in both, within Australia and globally.

5. LESSONS LEARNED

4.2 How long did the partnership last and how did the representation change over time?

4.3 Have the partnership arrangements changed?

Yes, as it now includes other partners and also resulted in the setting up of the ECU-Emirates Centre in Dubai.

4.4 Did winning the B/HER T Award make a difference to the project?

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5. LESSONS LEARNED

5.1 What would you consider the most important elements in establishing a partnership with another sector?

In our experience, long term sustainability of partnerships is often underestimated and this needs to be an important element when forming a relationship, especially between a university and industry. The benefits to both parties must be outlined and delivered. Senior management from both organisations must support the partnership and at the same time there needs to be ‘buy-in’ from all stakeholders. Internal stakeholders in both areas must be supportive and active at all stages when the project is implemented.

5.2 Were there any impediments e.g. governance, IP sharing, logistics?

There were many impediments, especially in the governance of the project. Getting all stakeholders involved in the governance proved to be a major challenge. Initially a lot of time needed to be invested in explaining the benefits of the project to senior management at both organisations. After this was established, other stakeholders, such as teaching and research staff, needed to be convinced as to why and how this project would benefit them as well as the University. The ‘silo’ effect had to be overcome so that all stakeholders worked together to deliver good results and this involved major governance challenges.

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Yes with additional partners as outlined above. The benefits of this project can be summarised as follows:

- Bringing together industry and university so that research drives the curriculum and the curriculum stays relevant;
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that real commitment must bring the relationship to an immediate end. This must be made clear. It’s important for the partner to be genuine. It is also crucial that the company have a clear need for the technology, and hence insure the new technology does not conflict with its existing portfolio.

2. WHY WAS THE PARTNERSHIP FORMED?

2.1 Teaching, research, community engagement, other?

The partnership formed for the express purpose of developing and commercializing the technology. The objectives were clear from the outset, firstly for the company to support grant applications by providing a pilot scale separator. This process required collaboration on the design. Once the pilot scale performance requirements had been met the next step involved the development of a full scale separator, again as part of a grant application. The clear goal was to produce a separator for the industry, and commercialise the technology.

3. WAS THE COLLABORATION SUCCESSFUL?

3.1 Were all objectives/outcomes met? If not, why not?

All of the objectives and outcomes were met, but not in accordance with the proposed time lines of the R&D Agreement. The first sale was in 2004. Sales targets took longer to reach. However, today, the sales targets have long been exceeded. Clearly, persistence was crucial in achieving the final success.

4. HAS THE COLLABORATION BEEN MAINTAINED OVER TIME?

4.1 Is the collaboration continuing now?

If not, why not?

4.2 Did the collaboration deepen between the partners? If so, how? If not, why not?

4.3 Have the partnership arrangements changed?

4.4 Did winning the B/HER T Award make a difference to the project?

The collaboration commenced in the year 2000 and continues to this day. The original organization, Ludowici, was purchased in 2012 by FLSmidth. The Reflux Classifier was a major interest of FLSmidth in making this purchase.

The collaboration deepened in 2008 following a further research breakthrough, which led to a redesign and new launch of the technology. There was enormous interest in the technology from 2008.

The R&D Agreement was transferred to FLSmidth when Ludowici was purchased. The original agreement still applies. We have been attempting to address weaknesses in the original agreement, especially in terms of the development of new technologies derived from the original platform. Winning the B/HER T award in 2005 was very important to the career of Kevin Galvin. With this recognition it was also easier to attract research grants. The award also provided Ludowici with profile in this area. This award was arguably the most important of the many awards that have been won. This award provided early recognition. Most awards require complete success in the first instance.

5. LESSONS LEARNED

5.1 What would you consider the most important elements in establishing a partnership with another sector?

5.2 Were there any impediments e.g. governance, IP sharing, logistics?

5.3 What would you consider the benefits?

5.4 Have subsequent partnerships/collaborations been developed?

The most important element is to insure the partner has a need for the new technology in their overall portfolio. The company needs to be able to assess the opportunity relatively quickly, taking advice from an independent expert. There must be no ambiguity in their commitment. It is crucial to insure the company is not simply looking to shelve the technology in order to protect their existing product line, and hence prevent their competitors from developing the technology. It is essential to obtain an early commitment of a tangible nature, for example, support for a grant application or cash input. It is also crucial the organization commit a person to collaborate and take ownership, and hence drive the project within the partner organisation.

It is important to take great care in preparing the Research and Development Agreement.

It is important to address who owns the IP. In our case we retained all ownership of IP. This ownership is important at the end of the 20 year patent period, as the ownership covers Trade Marks, designs and drawings. This means there is scope for negotiation on royalties following the 20 year period. So although we allowed the Agreement and licensing arrangements to be sold on to a new owner, our retention of the IP ownership was crucial. This ownership provides a point for on-going negotiation. If there is joint ownership, then who is licensing the technology to who? Our ownership of the IP provides a basis for our continuing relationship.

Establishing a relationship with new owners is not easy, given there is no track record between the two parties. Consequently, it is essential to try to build the new relationship. In our case this is easily done with the fully commercialized technologies, but more challenging with the new technologies that sit within our portfolio. The new partners are globally more significant and hence offer the potential for far greater traction with the industry, and therefore more sales and royalties.
... businesses, research institutions, government agencies, regulators, community organisations and others are increasingly seeing collaboration as the way to maintain or increase the quality of outcomes in productivity, profit, market share or other objectives. P64

... collaborative Australian businesses are 55% more likely to report increased productivity [other businesses performance measures are also positively affected]. P64

Between 2000 and 2010 the proportion of joint research-business patent filings fell from 37% to 25% of all patents filed that year. Although initial commercial intent and total patenting may be declining, the size of the knowledge market is growing with strong increases in income from licensing, options and assignments of intellectual property. P71

The research sector has a number of motivations for engagement with industry... The more compelling arguments are framed around economic development, productivity improvement, and building other benefits for the community... Australia has a world class research base, but transfer of that knowledge into the economy is sub-optimal. P74

How can we drive collaboration and engagement?... There is no magic bullet and no single architect. But there is great potential for improved productivity across all sectors by greater engagement, provided that we can get an intelligent combination of market pull and capability push and reduce the costs of collaboration. We need to build a positive culture that recognises the value in this engagement and seeks to leverage its benefits for all. P75

The most productive interventions will arise from a focus on the interests of all of the stakeholders in the innovation ecosystem: that is, through collaboration. P76

Why don’t businesses collaborate more?... It is often impossible for managers to assess the value of collaboration without first having done it. Understandably potential partners are often unwilling to share information as it may allow other businesses to walk away with free and useful knowledge. As a result, potentially productive partnerships may fail to be realised. Managers are also often unwilling to commit to high upfront costs necessary to develop collaborations as the benefits are often realised over the long term and may not be easily identified. Even when they see a benefit, managers may not have the capabilities necessary to coordinate and maintain inter-business networks. P81
MAKING THE CONNECTION

Driving collaboration across business, industry and tertiary education