Creating a Research Industry Outreach Program
July 18, 2014 University of Melbourne

Connecting Research to the Business Node

Presentation by Christopher Goldsworthy, Asst. Executive Director
Business/Higher Education Round Table
The Round Table’s credo is – **Making the Connection: driving collaboration across business, industry and higher education.** This has been its mission since inception 24 years ago. Collaboration doesn’t happen without connecting. **Connecting is Conscious Coupling.**

In considering the idea of Conscious Coupling the question to ask is **WHY?**

There continues to be much comment on the business, industry higher education nexus; including statements from the Minister for Small Business, Bruce Billson; the Minister for Industry, Ian Macfarlane, the 2013 Australian Innovation System Report and the Statement of Intent released earlier this year by a group of industry associations.

There is **absolute** agreement on what is important and crucially what needs to happen. This illustrated by the following quote.
In a recent CPA publication Australia’s Competitiveness: From Lucky Country to Competitive Country I quote - ‘One common theme that comes through in business response to government investment in education, training, science, and technology is the disconnect between the investments that are made and the needs of business… The issue may be one of failing to be explicit on the goals of the research funding… The solution here is to be explicit. The trouble in the existing system is that ambiguity in terms of intent means that basic research is not sufficiently respected and research in general is often not relevant to the needs of the economy… This raises the question of whether commercially directed research is best housed in universities, university-related institutes, independent research institutes or companies… The appropriate division of labour is a question that should be revisited from time to time as priorities and the nature of research undertaken changes.’ Chapter 9 Implications for Australia, Australia’s Competitiveness, CPA Australia 2013 pg247-248
## Research Outcomes

### Table 4.2 Funding of research and research commercialisation outcomes

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<td>Number of formal agreements on academic/research collaboration between</td>
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<td>Australian universities and overseas institutions (a)</td>
<td>-</td>
<td>3,089</td>
<td>3,054</td>
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<td>3,421</td>
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<td>3,493</td>
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<td>5,086</td>
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<td>Adjusted gross income from Licenses, Options and Assignments by publicly</td>
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<td>funded research agencies and universities ($million) (b)</td>
<td>-</td>
<td>136</td>
<td>68</td>
<td>117</td>
<td>238</td>
<td>94</td>
<td>315</td>
<td>146</td>
<td>91</td>
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<td>Gross income from contracted research and consultancies by publicly funded</td>
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<td>research agencies and universities ($billion) (b)</td>
<td>-</td>
<td>-</td>
<td>1.31</td>
<td>1.29</td>
<td>1.40</td>
<td>1.26</td>
<td>1.24</td>
<td>1.48</td>
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<td>Number of start-up companies in which publicly funded research agencies and</td>
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<td>universities have an equity holding</td>
<td>-</td>
<td>66</td>
<td>154</td>
<td>172</td>
<td>178</td>
<td>173</td>
<td>176</td>
<td>165</td>
<td>166</td>
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<td>Number of Australian patent and plant breeder rights filed by publicly</td>
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<tr>
<td>funded research agencies and universities</td>
<td>-</td>
<td>533</td>
<td>462</td>
<td>495</td>
<td>470</td>
<td>567</td>
<td>645</td>
<td>673</td>
<td>669</td>
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<td>Number of LOAs yielding income from publicly funded research agencies and</td>
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<td>universities</td>
<td>-</td>
<td>472</td>
<td>537</td>
<td>577</td>
<td>587</td>
<td>523</td>
<td>580</td>
<td>742</td>
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<td>Universities’ income from Cooperative Research Centre Research (CRC) (b)</td>
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<td></td>
<td>-</td>
<td>81</td>
<td>130</td>
<td>131</td>
<td>126</td>
<td>124</td>
<td>123</td>
<td>119</td>
<td>108</td>
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<td>University income from industry</td>
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<tr>
<td></td>
<td>-</td>
<td>331</td>
<td>492</td>
<td>627</td>
<td>672</td>
<td>773</td>
<td>666</td>
<td>797</td>
<td>882</td>
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Notes: (a) For 2000 and 2005, the 2001 and 2003 figures were used respectively. (b) All figures are in constant 2011 prices.
The Australian economy needs to reposition itself. New knowledge and research must be disseminated in order for market opportunities to be identified and pursued. We must become a knowledge conversion economy. Australia Inc. has the intellectual capacity to be ‘first among equals’ in our region. What will set us apart is how we transition to a structured elaborately transformed economy. In a networked world, thinking and economic development is shaped from outside in.

Prof Mark Dodgson from UQ Business School states – ‘We import four times as much intellectual property as we export… pointing to poor application of innovative ideas in the business context…’ He suggests ‘Collaboration… between research and business, and between the research and market-led stimulants to innovation is essential’. Dr Geoff Garrett, Qld. Chief Scientist agrees - ‘If the fruits of our labour don’t get to market, create jobs and improve the quality of life, we’ve failed’. *Innovation stagnation*, UQ Business magazine Momentum, Issue 3 2013

This is important if Australia Inc. is to be a major player in the Green Growth/Circular economy.
The Green Growth/Circular Economy

Source: In the Black
July 2014
Elaborately Transformed Economy

Figure 5.1 A typology of eco-innovation


Note: Eco-innovation can be understood and analysed according to three axes—targets (the basic focus area of eco-innovation), mechanisms (methods by which the change in the target takes place or is introduced) and impacts (the eco-innovation’s effects on the environment).
In the Economist magazine an article titled *Getting PH.Ds to think like Entrepreneurs*, dozens of young scientists and engineers were told I quote - ‘to cut the scientific crap and instead identify would-be customers who might care about their products.’ The article which praises a seven week program run by the National Science Foundation Innovation Corps helps attendees ‘to focus on the problem, not the solution…’ and ‘… to figure out if their academic work has commercial potential…’ and ‘It’s a very smart way to see more of the research being conducted wind up turning into American jobs.’ Nick Leiber, *Getting PH.Ds to think like Entrepreneurs*, The Economist Oct-Nov 2013

It would be unfair to expect universities to be experts in the business of business; this is the premise for connecting. And at its core is research and its migration to different end points [e.g. public good or commercial ROI].

Ancillary to this is CPA Australia suggesting – ‘Australia should consider how much of government funding should go to onshore research in Australia, offshore research in other parts of the world, and to technology-scanning on a global basis’. Chapter 9 *Implications for Australia*, Australia’s Competitiveness, CPA Aust. 2013 pg248
Knowledge conversion and repositioning an economy is difficult. As the following graph shows, the dispersion of the research workforce is time, demand-side and context specific. A structural shift will not happen without a degree of synchronicity on three levels: 1 – R&D dissemination; 2 – time and context specific connecting; and 3 – demand-side and value adding collaborations.

The 2013 Australian Innovation System Report states – ‘An implicit characteristic of a high-performing innovation system is that the actors within it are interconnected and able to effectively collaborate, thereby maximising the sharing of resources and ideas’. Chapter 2 Business Innovation and Collaboration, Australian Innovation System Report 2013 pg53
Time, Context & Demand

Chart 4.3 Science and research skills used in undertaking core business activities by industry sector and innovation status

It is a fact that those businesses that do connect and do collaborate enjoy a significant multiplier effect.

The Australian Innovation System Report 2013 reports - ‘… that the more diverse the sources of information and partners are the stronger the innovation performance of a business… Furthermore, this effect appears to hold for all types of innovation.’ Chapter 2 Business Innovation and Collaboration, Australian Innovation System Report 2013 pg54

To extract value Australia Inc. needs to have a dynamic Collaborative Ecosystem. An ecosystem exists by its very need to exist: that is, there is a recognised interdependence among the inhabitants. An ecosystem can provide a modular response to market dynamism and external stimuli. As Prof Roy Green, Dean of the UTS Business School recently said – ‘Research shows innovative companies are most likely to thrive in a highly connected ecosystem...’ When inspiration sticks, In the Black, CPA Australia, April 2014
Collaborative Innovation - productivity

Chart 2.1 The effect of innovation and collaboration on firm productivity, 2010–11

Source: DIISRTE Custom data request from the ABS (2012) Innovation in Australian Business 2010–11, cat. no. 8158.0
Collaborative Ecosystem – connect the dots

Chart 2.2 Innovation type by the number of sources of ideas and information for innovation, 2010–11

Source: DHS RTE Custom data request from the ABS (2012) Innovation in Australian Business 2010–11, cat. no. 8158.0
For there to be sustainable economic growth Australia Inc. requires its workforce to be ‘fit for purpose’. CPA Australia posits - ‘The economy will only go as far as people in Australia can take it.’ Chapter 9 *Implications for Australia*, Australia’s Competitiveness, CPA Australia 2013 pg239

If we don’t have a ‘fit for purpose’ workforce, how do we sustain a collaborative ecosystem. The following graph suggests calibration is required.
Fit for Purpose Workforce

Chart 4.2 Proportion of research personnel in business, higher education and government, by selected countries, 2010

Note: Data for 2010 or nearest available year
The benefits of connecting are real. In November 2013 the Round Table launched the publication *Collaboration: The 21st Century Mechanism for Success*. In it are 10 case studies, all previous B/HERT Award winners.

The case studies represent a broad sweep of industries, disciplines and intended goals. They convey the essence of lessons learned, and the positive and tangible outcomes such collaborations can deliver.
The Currency of Connectivity

Connecting impacts skills training, curricula design and graduate employability

Connecting impacts knowledge creation, dissemination and conversion

Connecting impacts business formation and performance, and labour market dynamics

Source: C Goldsworthy 2014
Economic development and comfort zone are not natural bedfellows. Singapore, Taiwan, South Korea and lately China reflect this. I quote - ‘While each country has used a different combination of policies to foster innovation, each has combined regulatory reform with a willingness to pick winners by actively investing in selected industries and building interconnected research and business hubs.’ *When inspiration sticks*, In the Black, CPA Australia, April 2014

In the end, it is all about **relationships**.
The Impact of Conscious Coupling

Social Equity
- Workforce design
- Work integrated learning
- Labour & capital mobility

Economic Development
- Knowledge conversion
- Collaborative dynamism
- Productivity

Regional Leadership

Nation Building
Connecting Research to the Business Node

24 Years of MAKING THE CONNECTION
Driving collaboration across business, industry and tertiary education