

Australia's Future in Research and Innovation

ANU Submission

The Australian National University, as a research-led education institution, plays a crucial role in developing and supporting the Australian innovation system. Successfully translating publicly funded fundamental research into direct economic and social impact is key to building our international standing and attracting the best staff and students. Providing educated graduates to meet commercial, social and environmental needs of the nation; and directly engaging with business, industry and government to address problems that restrict productivity and growth are areas that demonstrate relevance for the University.

To better assist commercialisation including overcoming Australia's geographic, economic and labour challenges, the Government will need to make a major commitment to supporting industry-university engagement. Consistent commercialisation funding and access to venture capital is also required to improve Australia's ability in translating its world class research into impact.

Developing Absorptive Capacity

Progressively de-risking opportunities from research to business successfully along the innovation pipeline requires not only responsive collaboration between research institutions, business, industry and governments, but access to skilled people that can traverse across sectors of the innovation spectrum and funds targeted at the risk levels along the spectrum.

The reforms recently announced to university funding provide strong motivation to increase and improve industry engagement with universities, however there is need for change both in universities and within industry. In this context, the review of the R&D Tax Incentive by the newly created Innovation and Science Australia initiative is welcome as a way to more successfully incentivise industry to collaborate with researchers on R&D projects.

There is, and always will be, a cultural difference between university research and business/industry priorities, but the key is harnessing this tension to promote creativity. Research organisations need skills to understand the drivers and priorities of business and such individuals provide the absorptive capacity required for successful adoption of research outcomes.

There is a need for translation and commercialisation training programs for undergraduate and post graduate students and early career researchers that equips them to work in both environments and in particular increases the capacity to absorb innovation in SMEs. Filling the gap between university research and industry requires a generation that understands both cultures, which may take 10 years to foster. A long term training program is required to create innovation capacity and capability in Australia.

- A model for skills development is the UK's Knowledge Transfer Partnership program. It pairs a business with a research partner, joined by a publicly funded Knowledge Transfer Associate whose role is to transfer the knowledge the business is seeking via a strategic project. This simple methodology focusses on developing and then sustainably transferring skills to effect innovative change in business, recognising that knowledge created in an academic environment may need extensive adaptation to meet business requirements.

Funding Research Translation

The opportunities and challenges for the nation's economy cannot be uncoupled from its location at the centre of the fastest growing region in the world; Australia must focus on translating its novel intellectual property within the global supply chain of innovation this creates.

ANU Response: Inquiry into Australia's Future in Research and Innovation

To drive the uptake of Australian research requires a Government commitment to leverage specific research translation funding, and venture funding to complement fundamental and industry collaborative research funding to best support competitiveness in this global environment.

The path from research through commercial development to market adoption is not linear, but it does progress through a series of stages, and to be effective, a developed country needs to be active across the spectrum. Australia is active at both ends of the spectrum but its commitment to translation, and publicly funded schemes which encourage industry investment in research and development, is comparatively poor. Direct action is required through co-investment schemes between the public and private sector. Open university-industry schemes with regular cycles allow both the public and private sector to commit to building partnerships.

The ANU fully supports the recent change to the ARC Linkage Project scheme that enables year round submissions. This scheme is vital in promoting collaboration, building relationships between research and end-users and developing initial collaborative partnerships. Further support for international collaborations within the scheme (without the requirement for Australian partners) would increase the number of projects that reflect true international partnerships.

To take research outcomes further down the innovation pipeline to a point of acceptable commercial risk requires larger scale projects often with multiple partners on a pre-competitive basis. There is need for a responsive Research Translation Program. To translate publicly funded research into application requires investment; for industry to be interested it also requires considerable public sector investment to de-risk new technology and strategic research to the point of acceptable applied risk¹.

- There is a case for the establishment of Research Translation Centres similar in nature to the UK Catapult Centres. These centres have long term funding allowing new technologies, methods and processes to be developed. They are based within institutions that have existing expertise and are focused on areas of potential growth for collaborating companies. Co-locating collaborative centres with universities allows integration of administrative functions of the host institution, thus benefitting from economies of scale, but with the direction of programs and projects determined by business and industry.

Early stage equity funds are needed to expand growth of our country's emerging start-up companies. Raising a new early stage fund within Australia is difficult however. In addition, successful innovative SMEs also suffer from a lack of available growth capital that is needed for them to take the next step to global markets. There is a need to support early stage funding mechanisms that open up capital markets to early and growth stage companies that complements the existing Accelerating Commercialisation schemes.

Many of the issues highlighted above have been addressed in the recent Government Innovation Statement. How these translate into viable programs will be the determining factor.

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¹ Mazzucato Mariana (2011), [The Entrepreneurial State](#) London: Demos