

THE SEEDS OF TRANSITION: INITIATIVES FOR THE 2020 ECONOMY AND BEYOND



Ken Boal
President
Business/Higher Education
Round Table

PRESIDENT'S MESSAGE

"Exciting times" is a phrase we have heard much of lately. It will of course mean different things to different people but at the Business/Higher Education Round Table it represents renewed opportunity, momentum, investment and focus. I say this in reference to the National Innovation and Science Agenda (NISA) released by the Commonwealth government in late 2015. In the interim there has been considerable commentary on NISA but suffice to say an enabling policy has to be a good thing for the country.

As we look to revitalize and sustain the annuity sectors (e.g. mining, agriculture, tourism), and establish and grow new growth drivers across the economy it is important to maintain a long-term view, and balance opportunity costs foregone with patient capital. This is not easy given the expectations for quick returns be it from new products and/or business processes/models. With NISA encouraging risk taking, collaboration and talent development as part of its objectives so it is that these objectives connect strongly with the *raison d'être* of B/HERT.

A repositioned economy based on structural change enabling knowledge/IP translation and not restricted by geography is an outcome that will serve Australia well as we move further into the 21st century. And so it is that the contributors for this edition of the B/HERT News bring a focus to initiatives that will be a part of this journey. The strength of our resolve in repositioning the economy will in part rely on the level of collaboration between the sectors, the sophistication of those partnerships and recognising the inherent value of a knowledge conversion/IP translation ecosystem.

I hope you find the contents of News 35 of interest and somewhat of a tonic. I offer my warmest appreciation to the contributors and to the team at B/HERT for putting together this edition of the B/HERT News.



Reich Webber-Montenegro
 Head, Strategic Partnerships & Development Research and Applied Commercial, Asia Pacific Merck

SCIENCE NEXT COLLABORATIVE: PROMOTING INTERACTIONS BETWEEN ACADEMIA AND INDUSTRY

In output terms, Australia's research performance is impressive: we account for only approximately 0.3 percent of the global population, yet in 2013 contributed to nearly four percent of total research outputs in terms of publications and citations. However, as the Watt Review of Research Policy and Funding Arrangements for Higher Education (2015) notes: "This is not enough to ensure a productive future for Australia. Innovation fuelled by an entrepreneurial culture is an important driver of productivity and the capacity to innovate, grow businesses and create jobs increases when business and researchers work together."

Despite Australia producing much quality research, we have been poor at engaging with industry and translating research discoveries into commercial outcomes. While there are some good examples of commercialisation in Australia through agencies such as CSIRO, the level of output falls well short of international benchmarks. Thus, in the OECD, we rank 29th out of 30th amongst the leading industrial nations for the engagement of academic and research institutions with business and large and small to medium sized enterprises (SMEs). By way of an example, Australia has a limited biotechnology industry despite strong fundamental research strengths in this area, which results in lost commercial output. The lack of opportunities in the biotechnology industry (and other science-, biomedical- and technology-based industries) restricts significantly job and career opportunities for Early- and Mid-Career Researchers (EMCRs) and graduates.

In a broader context, there are many challenges faced by EMCRs to conduct their research, including securing funding, generating high-quality, publishable data and potential commercialisation of their research discoveries. With respect to the latter, academia encourages an environment of curiosity-driven, fundamental research which (hopefully) leads to high-impact publications. Reputation, promotion and profile result from these activities. However, applied, commercial and translational research are long-term projects that often do not lead to conventional research publications. Resultant patents and intellectual property generation from commercial activities get little recognition from within academia – they simply do not fit the standard mode of operation. In Australia,

in contrast to many western countries, there is almost an anti-entrepreneurial culture within our universities. As a result, there is little incentive for Australian academics, particularly EMCRs, to venture down the commercialisation path. For those who do, commercialisation of their research is often an unknown and difficult path.

Last year, one of the world leaders in the life sciences industry, Sigma-Aldrich (now a part of Merck), launched an initiative to address these issues relating to the academia-industry divide. Led by Ms Reich Webber-Montenegro, the Science Next Collaborative (SNC) is a first-of-its-kind Australian initiative that aims to empower our world-class scientists. Its overarching goal is to provide scientific researchers, especially those in their early- and mid-career, with expert guidance and educational resources to help them navigate through the many challenges they may face in securing viable returns and commercial outputs from their discoveries. As part of the SNC initiative, Sigma-Aldrich gathered some of Australia's top scientists to form the SNC Think Tank to facilitate an exchange of knowledge and ideas, and create educational resources and best practice models for commercialisation.

Prof. John Carver is one of the six Ambassadors of the SNC Think Tank, along with Prof. Mark Baker (Professor of Proteomics, Macquarie University, Sydney), Prof. Peter Currie (Deputy Director, Australian Regenerative Medicine Institute, Monash University, Melbourne), Assoc. Prof. Derek Richard (Principal Research Fellow, Faculty of Health, Biomedical Sciences, Biomedical Sciences, TRI, Brisbane), Assoc. Prof. Kaylene Simpson (Head of the Victorian Centre for Functional Genomics, Peter MacCallum Cancer Centre, Melbourne), and Prof. Deborah White (Centre for Cancer Biology, Centre for Personalised Cancer Medicine and Professor of Medicine and Paediatrics, University of Adelaide). Early last year, Ms Webber-Montenegro facilitated an SNC Think Tank meeting, at which the group focused on a pressing problem in the life sciences industry: how to develop better collaborations between academia and industry to enable Australian scientists, especially EMCRs, to successfully translate their research through to commercialisation.

As a result of the Think Tank meeting, the SNC initiated and undertook the following activities last year:

- Published a Position Paper entitled *Bridging the gap between Australian industry and academic research*. The Paper described the current landscape of commercialisation in biomedical research, some of the key challenges and gaps facing EMCRs and potential solutions to better bridge the gap between industry and academia.



John A. Carver
 Director, Research School of Chemistry The Australian National University SNC Ambassador



- Launched the Science Next Collaborative website (<http://sciencenextcollaborative.com/>), an online resource hub that guides researchers through the path(s) of commercialisation, with real life examples, case studies, and other educational resources from both academic and industry entrepreneurs.
- Hosted three SNC Forums in Brisbane, Sydney and Melbourne. The forums were very well attended and brought the topic of academia-industry interaction to the forefront and provided an opportunity for EMCRs to network and interact with academic and industry leaders. The forums had a line-up of expert speakers, and panel discussions focused on professional development, commercialisation and best practice models.
- Generated a series of Educational Resources including patent and intellectual property management and career success stories in the pharmaceutical and biotechnology industries.

The SNC is a first for any company in Australia. In instigating the SNC, Sigma-Aldrich (now a part of Merck) has put their hand out to academia to try and build bridges and, in doing so, is showing innovation and commitment to the research community.

The National Innovation and Science Agenda (NISA) was announced by the Turnbull Government in late 2015. There are many synergies between the goals of the SNC and NISA in bridging better links with industry and in providing solutions for our young research entrepreneurs in their path to commercialisation. The NISA aims to ensure that our best and brightest researchers have jobs and stay in Australia, and that we retain and develop our world-class science and research capability. A major initiative of the NISA is the establishment of a new \$250 million fund — the Biomedical Translation Fund — which will invest in promising biomedical innovation and commercialisation. This initiative is directly commensurate with the goals of the SNC in enabling our EMCRs with the necessary skills to make a successful commercial transition. As part of this, SNC is developing programmes and tools that have a significant impact on the career development of EMCRs, including their endeavours in commercialisation.

Also in close overlap with the ideals of the SNC, the Innovation Connections initiative within NISA (an investment of \$18 million) aims to connect more small and medium-sized businesses with researchers and thereby drive new industry-led collaborations. The partnerships between researchers and SMEs will foster the development of new ideas with commercial potential and will identify the knowledge gaps preventing business growth. This will pave the way for companies, for example in the biotechnology and biomedical

industries, to take in talented EMCRs and expose them to their cutting-edge Research and Development projects. Such exposure will prove invaluable in their career path and open new opportunities for these EMCRs, and facilitate closer links, and movement of staff, between academia and industry.

This year, there are more SNC activities planned, such as a series of educational SNC Tech Talks and Forums. The SNC will also be producing more educational resources to continue supporting EMCRs. EMCRs are encouraged to take advantage of the opportunities provided by the SNC, particularly in light of the Government's agenda to enhance academic and industry interactions.

With the support from Sigma-Aldrich (now a part of Merck) via the SNC and other parts of the life sciences industry, along with government initiatives such as NISA, the Australian research sector is a big step closer to enhancing interactions, and thereby bridging the gap, between academia and industry.

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