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DEVELOPING AN ENTREPRENEURIAL ECOSYSTEM

IN AUSTRALIA

Ladies and Gentlemen,

The agenda for this conference on driving research commercialisation is a joy to behold. It is jam-packed with topics essential to the process of innovation:

- Collaboration between academia and business;
- Technology translation and transfer; and
- The encouragement of academic engagement with end users.

We do world-leading research in Australia. Millions of Australians know that, even if they don't know the details.

We do not make that research work for us as well as it could. Lots of us know that, too; even if we don't understand why.

That has to change and it needs to change quickly. When I speak of "developing an entrepreneurial ecosystem in Australia", I'm not talking about planting a few acorns, then sitting back and relaxing in the fond belief that mighty oaks will eventually grow.

Nothing is more dangerous to a society than complacency. It's the insidious destroyer of cultures, civilisations and quality of life.

The problem with complacency is that it's comfortable – blind but comfortable. Like fools in a fools' paradise who like to advise, "If it works, don't fix it".

If we can't see that the world is changing or we deny that the change might affect us, we never have to get our heads around doing things differently or be tested by venturing into the unknown.

The irony, for those in Australia who are content to stay with the known and ignore the successes of competitors, is that Australians have proved themselves to be exceptionally good competitors.

We're renowned for it – in sport, and in the arts too.

When we've needed to lift our game – when we discovered that we couldn't excel simply by carrying on as usual, we adjusted. We created centres of excellence which have achieved worldwide renown: like the Australian Institute of Sport, and the Sydney Opera House.

We created them because we don't like losing. We compare ourselves with the biggest and the best, not just with "nations of comparable size and population". We take a bold approach and it's worked for us, again and again.

Finishing outside the top ten in the Olympic medal tally would be regarded as outrageous in Australia. There would be national soul-searching. Political and administrative heads would roll.

But where do we sit in regard to collaboration between industry and academia: 30th out of 30 OECD countries in terms of the percentage of innovation-active large firms collaborating on innovation.

How can we explain this?

Are our universities poor researchers? Do we lack research talent in this country? Perhaps we just don't have the research to commercialise and there's no way we're going to get it?

No-one knows better than the people in this room that it isn't so. We have an exemplary research record with high international ranking for discovery. But the potential benefits of inventiveness and new knowledge will be squandered without the entrepreneurship necessary for translation and commercialisation of that newness into world markets. Successful entrepreneurs are never complacent; they see change as opportunity; the excitement of winning outweighs any fear of failure. Entrepreneurs create new businesses and new jobs by getting new products and services into world markets. Tony Surtees (founder of Zeetings) describes entrepreneurs as the software needed to drive the hardware in any entrepreneurial ecosystem.

My first start-up was at the age of 25. Having enrolled in every new enterprise and venture capital course then available in my Harvard Business School MBA program, I started Australia's first VC company in August 1970.

One of the guru professors at HBS back then was a wonderful Frenchman, General Georges Doriot. He taught manufacturing process; he was also the founder of one of the earliest and most successful VC firms in the USA, American Research and Development Corporation ("ARD"). I had observed the successful IPO of Digital Equipment Corp, one of ARD's portfolio companies, and was mightily impressed that Doriot's \$100,000 investment had turned into \$400 million on the NYSE. Digital equipment was a disrupter; having introduced a mini computer in the late 1960's to compete with the IBM mainframe. The entrepreneur, the wizard who enabled this alchemy, was Ken Olsen.

I quizzed Professor Doriot about what he thought was the single most important characteristic among the many successful entrepreneurs, like Ken Olsen, that he had backed. His answer surprised me at the time; he said they all had a "sustained attention to detail". Not just a good idea or prototype, but sustained attention to product and commercial detail necessary for successful market and corporate viability.

Good entrepreneurship is not about taking a punt; it involves insightful analysis of risk. Yes, timing and luck often determine the outcomes, but my experience over 4 decades of VC and private equity investing confirms our most successful projects are run by entrepreneurs with

sustained attention to detail A quality, by the way, manifest in our best researchers and inventors.

Entrepreneurship is not just important for start-ups. It is essential for any business, big or small, that wants to grow its sales and profits, to stay ahead of the competition with new and smarter products and services. This may involve continuous technology innovation (think GE and CSL) and/or business model innovation: think Amazon, Air BnB and Uber.

So how do we encourage much more entrepreneurship, among academia, business and the wider community? What sort of environment will entrepreneurs thrive in? It will be one in which the commercialisation of our research is celebrated; where the novel and the risky can be pursued with licence to fail; where risk capital is plentifully available to support product trialling and market development; where an enthusiasm for the possible abounds in multiple sectors, including health and medical research, agribusiness, ICT, renewables, mining, cyber security and space, transport and cities, financial services and more.

With such an entrepreneurial ecosystem, more and more of our young Aussie scientists and entrepreneurs will return from Silicon Valley, New York, Berlin, Tel Aviv, London and Singapore. And more and more of our entrepreneurs will stay and succeed from an Australian home base.

The NISA announced by the PM in December 2015 does address this shaping of our entrepreneurial environment within its 24 measures.

In my view:

- The NISA is a potential game changer for the trajectory of a future Australian economy and society. It provides a comprehensive blueprint that includes a number of significant measures which address some key barriers to innovation in Australia, for both researchers and businesses and also for international co-operation on innovation.
- The independent statutory board which I chair, Innovation and Science Australia, is charged inter alia with providing strategic whole-of-government advice on all science, research and innovation matters. It reports through Minister Pyne (Industry, Innovation and Science) to the Innovation and Science Sub-Committee of Cabinet, chaired by the Prime Minister.
- The Board has 2 core responsibilities:
 - One is to develop a 15-year national strategic plan for innovation and science. We need the advice of both the research and business sectors and we will be commencing public consultations later in the year. The goal of our plan is to be up there with the most innovative nations on the planet: Switzerland, the United Kingdom, Sweden, USA and Israel.

To make our plan we are starting with an audit of what the existing innovation and science system looks like. We'll be speaking with and listening to the

research and business sectors, state and federal government departments and the broader community.

- A second responsibility is to evaluate, monitor and recommend changes concerning a broad range of existing incentives and programs delivered by the Department of Industry, Innovation and Science, and other departments.

On collaboration, the NISA is committed to changes in the criteria for allocation of research dollars to universities and supports the Watt Review's recommendations. Until this happens, there is little incentive for researchers (and their host establishments) to want to and be able to be entrepreneurial, and to reach out to business. Professor Aidan Byrne will address this important issue in the next session, so I will simply implore that we keep the measurements of metrics, ie of industry engagement, as simple and as transparent as possible, especially to those of us not on campus.

Of course it takes two to tango, and so the other side of this riddle of low collaboration is business. That is, business is failing to reach in to universities and institutes for ideas and solutions. Business enjoys over \$3 billion per annum through tax incentives designed to lower the cost of private R&D; but nowhere in the R&D tax incentives is there any requirement or incentive for collaboration. The NISA requested a review of this scheme for consideration later this year.

In addition to tax incentives and grants programs, the NISA also creatively provides some co-investment programs which will facilitate significant incremental collaboration for commercialisation. The \$200 million CSIRO Innovation Fund and the \$500 million Biomedical Translation Fund are both expected to be underway in the next few months.

The Biomedical Translation Fund (BTF) will provide support to the health and medical research sector by providing capital for later-stage commercialising of medical research discoveries. The government is providing \$250 million in capital for the BTF to be matched dollar for dollar by the private sector. This will represent a significant \$500 million boost in venture capital available for the translation of our world-class medical research into real-world commercial outcomes. This means growth in high-value jobs, exports, profits and better health outcomes. It means expansion of our outstanding clinical trials capability and a deepening of the ecosystems of biopharmaceuticals, medical devices, processes, technologies and procedures and services, including digital health.

Separately, a \$200 million CSIRO Innovation Fund will be formed to co-invest in new spin-off companies and existing start-ups, from the CSIRO itself and from other research organisations. This is a key early-stage funding initiative to expand and support entrepreneurship and investment pipeline for it, advanced manufacturing, new materials and much more.

The NISA also addresses this need for venture capital with important taxation measures. Private investors prepared to back entrepreneurs and start-ups will be able to receive generous 20% offset credits and capital gains tax exemptions. These "angel investors" tax benefits will be available for individuals investing up to \$1million per annum in start-ups.

This will turbo-charge activity in the incubators, accelerators and early-stage phases of the entrepreneurial ecosystem.

The NISA also addresses changes to the tax treatment of Early Stage Venture Capital Limited Partnerships (ESVCLPs).

Partners in a new ESVCLP will receive a 10% non-refundable tax offset on capital invested during the year; the maximum fund size for them will be increased from \$100mn to \$200million; and they'll no longer be required to divest from a company when its value exceeds \$250million.

These changes recognise the need for a greater variety of investors, and managers undertaking a broader range of investment activities.

The government also amended the rules of the Employee Share Scheme (ESS) whereby employees receive options for potential ownership or equity in a company either to top up their salary or in lieu of a pay rise.

International experience confirms that's what high-growth companies need to do to attract and retain talented staff. Now these employees in Australia won't have to pay tax on their options until they are actually benefiting from them.

We want our innovators, like our sportspeople, to spread their wings and experience places where they can learn, as well as teach, compete and excel.

We want them to visit places like the Massachusetts Institute of Technology and Silicon Valley – rather than emigrating there.

About a fifth of the most recent decade of graduates from MIT have started businesses. I am informed that aggregate sales have totalled over 2 trillion US dollars.

No-one questions the quality of MIT's pure science and research. What they've done is attach an entrepreneur's launching pad to the laboratories.

We also need the kind of students who can flourish in that sort of environment. We need to seek out and encourage those that do want to have a go and we need to pay more attention to the career paths and possibilities of those who might enter and enhance a STEM enabled workforce. So the NISA has developed programs with funding for STEM curricula development and for attracting more girls and women into STEM.

NISA is also supporting incubators and accelerators through the \$8 million incubator support initiative. Incubators are a vital part of any effective innovation ecosystem. They boost start-ups to realise their economic potential faster by mentoring them and providing funding, resources, knowledge and facilitating access to business networks. A new element of the Entrepreneurs' Programme will help incubators and accelerators foster innovative, globally-focussed start-ups, and support secondments of national or international expert advisers. The NISA initiative opens up for applications in mid-2016.

Let me conclude.

The NISA is a huge step forward in removing some barriers, for creating appropriate incentives for risk taking and for collaboration, for acknowledging the importance of innovation and science in a future Australian society. But governments can only do so much Our universities and research organisations, and our businesses big and small, venture capitalists and the wider community will hopefully respond What will a successful response look like in future years? Universities will be the hotbed of entrepreneurship where spin-offs of new technology businesses number in the hundreds annually. Businesses, big and small, will be collaborating with the smart research campuses in their sectors, competing to co-invest in the development of new product and services.

We will at last have an entrepreneurial ecosystem that gets Australia into the top 10 innovation nations of the world.