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CEBIT SPEECH

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Innovation and Science Australia

I would like to thank Managing Director, Harvey Stockbridge, for inviting me to speak at the 15th CeBIT Australia event and the fourth year of the CeBIT StartUp Conference.

I am thrilled to see the excitement and buzz of the Australian StartUp community and the interest it's generating in innovation in the broader community. Back in 2000 I wrote a book titled "Nothing Ventured, Nothing Gained". This looked back over my three decades of venture capital investing, the winners and the losers. It enabled me to distil 20 key lessons from the successes and failures; lessons for me from what has been and continues to be an exhilarating journey in VC and PE.I should emphasise these are lessons for me, not necessarily for you; but I will mention a couple of them during my remarks today.

One thing I have learned to accept and deal with …… there is never a shortage of people around to tell you why something won't work. And for many the fear of failure seems to trump the excitement of gain.

In every aspect of life, it's the venturesome who make the new world. They're people like Scott Farquhar and Michael Cannon-Brookes, who began their company with a $10,000 credit card loan, and a first employee who slept on Scott's sofa for a month or so.

Their company Atlassian now sells to over 40,000 companies in more than 130 countries, and employs more than 1000 people: who all benefit from a share incentive plan and a share purchase plan. His company's software has helped NASA build and test the Mars Rover, and helped Cochlear make its world leading implants.

I've learnt – the good way and the hard way – that timing is sometimes more important than analysis. One of the early search engines, LookSmart, came my way in the late 1990s. Almost 20 years ago, these were the pioneering internet start-up days. We did a couple of things right: with my partners in Amwin Ventures we backed a high energy, early mover in the internet take-off era, Evan Thornley. Our analysis confirmed one thing, Evan was right. The internet enabled search phenomenon was going to change the world. So we piled in $2mn and in 2000 we made a cash gain of about $250 million – over a hundred times our initial investment plus fifteen times our Series B follow on investment. Part luck – we were pre Google and enjoyed a successful IPO on Nasdaq. We sold soon after escrow and just days before the massive tech crash of April 2000. This and other VC experiences underscored lessons No 9 and No 17 for me in "Nothing Ventured Nothing Gained". Don't be greedy and know when timing is more important than analysis.

A great idea will last as long as a pub conversation, unless somebody is prepared to do something about it. It needs to be thought through; checked out; shared. It needs to be given a life of its own. That's innovation: the partnership of new ideas and entrepreneurship to produce life-changing outcomes.

I can tell you from experience that it's not a good idea to be so dazzled by the science that you don't spend enough time on marketplace analysis. A bright idea doesn't necessarily walk hand in hand with commercial demand, and being years ahead of the market can prove to be very expensive. A brilliant solution to a problem that the marketplace isn't yet interested in solving is at best just a nice idea and at worst a very expensive folly. Beware of solutions looking for problems! Lesson No 4 for me in "Nothing Ventured Nothing Gained".

Cochlear is of course a great story of inspiration and inventiveness, but it's also a story of the importance of market research. Cochlear's sustained leadership position in the US, Japanese and European markets needed pioneering marketing work – which was delivered by founding entrepreneur, Paul Trainor and his chief marketing guy, Michael Hirshorn. They're part of the story, too – just as surely as the inventor, Professor Graeme Clark of the University of Melbourne.

Without entrepreneurship excellence, research excellence rarely finds a sustainable market.

We all know the story of Wi-Fi – a spin-off from pure intellectual curiosity with regard to black holes. It wasn't the outcome of a project to commercialise black holes. It came from systematic, sustained work – which started with the idea of measuring the pulses from exploding black holes. Most of us would struggle to fund such an esoteric project.

I understand that the CSIRO team led by John O'Sullivan didn't actually find any exploding black holes to measure. They discovered Wi-Fi instead; and they didn't decide that the project was a dud and give up. They kept looking; they kept wondering; and the people at CSIRO kept at it until it offered a direct marketplace application. They helped change the world!

Bright ideas, energy and drive are curiously democratic – they know no gender, racial or class boundaries. The limitations to greater commercialisation are other things like the fear of failure, lack of access to risk capital, regulatory impediments, absence of collaboration and entrepreneurship, distance from markets, shortage of software developers and other skills.

So let me now move beyond my anecdotal and personal experiences and share some thoughts with you about the future of innovation and science in Australia. I do so from the perspective of my role as Chairman of the Federal Government's independent statutory board, Innovation and Science Australia.

It is very clear that in recent decades Australia has been far more successful with research discoveries than it has been in the commercialisation of new products, processes and services. To some extent this reflects quite rational behaviour by business and consumers in a small domestic market system far away from world markets ……. Why not be agile importers and early adopters of other people's new technologies and products? Jack Dorsey, founder of Twitter and Square, just

recently remarked “Australia has adopted new technologies faster than the US, so we’re pretty excited about that.”

But for so many products and services today, the old tyranny of distance has been replaced by an internet and digital connectedness; a breathtaking step change in connectedness to ideas, suppliers and consumers worldwide. As Scott Farquhar puts it: “The internet has liberated us from the tyranny of distance”.

The most recent figures I have seen for Australia claim that 96% of 18-34 year olds use a smart phone; about 80% of them checking it as the first thing they do when waking up.

We are now more connected than ever before and this connectivity is fragmenting our supply chains and disrupting business models. In 2000, back when we listed Looksmart on NASDAQ, there were 400 million internet users worldwide; by 2015 that figure was 3.2 billion.

Innovation is often derived from new technologies, like the Cochlear bionic ear, new drugs and vaccines like Gardasil, the first vaccine against cervical cancer, developed by Australian Professor Ian Frazer. Worldwide sales of Gardasil are greater than US $1 billion per year and this has already provided hundreds of millions in royalties to the University of Queensland, and to the inventors and to CSL.

But innovation can also derive from new business models, for example the asset sharing models, core to the likes of Uber and Airbnb. These innovations can be even more disruptive than new technologies, especially in regulated markets like taxis ……. Although my prediction is that driverless technology will disrupt Uber in due course. Or maybe by then Uber will dominate driverless delivery of packages, pizza, groceries and people.

We are living in a time when these rates of change in all forms of innovation have never before been experienced. For most of us in business the opportunities and the competition are now literally 24/7 changing events. So how do we not just cope with this but embrace it?

In December 2015, Malcolm Turnbull announced his Government’s National Innovation and Science Agenda (the NISA) which I believe is a potential game changer in the trajectory of our economy and society. The NISA included 24 separate measures, designed in aggregate to motivate and facilitate an increased participation in and embrace of innovation. These measures are a mix of taxation and other incentives including legislation to reduce certain regulatory and other inhibitions against risk taking, direct co-investment programmes targeting early and later stage development of our home grown medical and other discoveries, changes in the way research in universities will be funded, long term commitments to essential research infrastructure, funding to support greater curriculum emphasis on STEM subjects in our schools and universities, and much more.

Innovation and Science Australia is an independent statutory board comprised primarily of private sector members; it’s mandate is to assist in the implementation of many of these NISA measures and to provide a whole-of-government advisory role on all science, research, and innovation matters. The Chief Scientist Dr Alan Finkel is Deputy Chair and the board reports through the Minister of

Industry, Innovation and Science to a new Innovation and Science Committee of Cabinet chaired by the Prime Minister. The board also has a range of supervisory, monitoring, evaluation, advisory and decision making responsibilities for several existing government programmes administered by the Department of Industry, Innovation and Science. These programmes include the $3 billion R&D Tax Incentives, the 33 CRC's, Entrepreneurs Programme, the ESVCLP and VCLP funds and the soon to be launched Biomedical Translation Fund - a co-investment venture fund of at least $500 million.

Innovation and Science Australia has also been tasked by Government with developing/recommending a long term strategic plan for the nation's science and innovation. This will be a 15 year plan and we hope to present our recommendations by September next year.

As this audience knows, Australia performs strongly on international measures of research excellence, an important driver of innovation. A recent *Scientific American* article ranked Australia 12th out of the world's best 40 countries for science. Even better, the World Economic Forum ranked Australia 1st on its list of the world's most creative countries in 2015!

But where are we in terms of translating our new knowledge and ideas into actual market outcomes? How good is our collaboration between academia and business?

The latest OECD table puts Australia last out of OECD countries that report on collaboration between business and public research institutions on innovation.

How can that be? There is no doubt that our alarming collaboration ranking is a direct contributor to our poor performance at commercialising our discoveries.
There are of course wonderful examples of successful Australian research and business collaborations – the Nucleus heart pacemaker, Professor Graeme Clark and Cochlear's bionic ear, CSIRO and Radiata's Wi-Fi, Resmed's sleep apnoea product with University of Sydney's Colin Sullivan, University of Melbourne and venture capitalist backed recent spin offs Hatchtech and Fibrotech, and University of Queensland with Gardasil and Spinifex, to name just a few.

But it seems we can count them on one hand so to speak, not in their hundreds each year. The good news is that we can – and will – dramatically improve on this performance.

So what are some things we can do to accelerate collaboration to achieve both research excellence AND commercialisation excellence? These are not mutually exclusive pursuits but frankly until we change the way research funding is provided to our Universities nothing much will change.

Dr Ian Watt's recent review has recommended a reweighting in block research grants to require end-user engagement in both the Research Support and Research Training programmes. Dr Watt's design embraces two funding drivers – the traditional peer reviewed competitive grants income plus a new businesses and other user income. This is bold and innovative and is already sending powerful signals to Vice-Chancellors on down.

But it is a two way street and not only do researchers need to reach **out** to business but business needs to reach **in** the universities and research organisations.

The Australian Government spends about $3 billion a year on the R&D Tax Incentives for business. The Government tasked me, as Chair of ISA, Chief Scientist Dr Alan Finkel and Head of Treasury, John Fraser ("fondly code named as the 3F's) to jointly review the R&D Tax Incentive. The review looked at opportunities to improve the effectiveness and integrity of the R&D Tax Incentive, including by sharpening its focus on encouraging additional R&D spending. As part of this review, we wanted to

understand how to improve the operation of the programme for business the degree to which additional R&D is encouraged; and if the programme could be recalibrated to include a greater emphasis on rewarding collaboration,

The review findings are currently being considered by the Government.

And the NISA is dealing with factors traditionally holding back risk taking including:

- Reducing the penalties for directors of unwitting insolvencies, with provisions to protect material contracts and safe harbours for directors initiating third party restructuring;

- Improving rules in employee share equity schemes; and

- Increasing taxation incentives for angel investors.

In conclusion, let me say I believe over the next few years we will see major shifts, not marginal ones, in collaboration **for** and the culture **of** innovation. We will achieve considerably greater commercialisation of our inventiveness and we will fashion a culture that celebrates success, tolerates failure and encourages those who give it a go.
The only fear that should preside is the fear of never making any difference.

Thank you.