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Mr Ian Blayney MLA
Chairman
Economics and Industry Standing Committee
Legislative Assembly Committee Office
Level 1, 11 Harvest Terrace
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Dear Mr Blayney

Inquiry into technological and service innovation in Western Australia

Thank you for the invitation for Curtin University to make a submission to the Economic and Industry Standing Committee's *Inquiry into technological and service innovation in Western Australia*.

As you would be aware, Curtin University has a long-standing and strong commitment to innovation and entrepreneurship. Clearly, this is an area that is critical to our future economic prosperity. It is in this context that universities have the potential to play a key role in terms of both supporting industry development and delivering the future workforce.

A core focus for Curtin University is how we work to ensure that our capacity for high quality research drives future economic growth, innovation and employment. As the August 2015 Senate Economics References Committee Interim report into Australia's Innovation System notes, Australia produces 3.9% of the world's research, which puts us 9th in the OECD, and we do this with only 0.3% of the world's population. Australia clearly delivers value in terms of research excellence.

However, where the Nation fails markedly, and Western Australia is no different, is in relation to our capacity to translate research into commercial outcomes. We rank 29th and 30th out of 30 OECD countries on the proportion of large businesses and SMEs collaborating with universities and other research institutions on innovation.

Curtin University submits there are a number of key drivers for successful development of new technology-based products and services. Some of these drivers are identified overleaf with descriptions of how they can best be supported and encouraged.

Motivated innovators

- Currently there are no strong institutional incentives in place for public sector researchers to engage in commercialisation activities. Many public sector institutions share commercial returns directly with employees and bear the early stage risk in commercial ventures, by meeting costs around early stage commercialisation activities including intellectual property (IP) protection. However, returns can often be modest and long development timelines mean that it can be 5-10 years before any material return is realised.
- National award schemes that celebrate and promote successful technology transfer have a role to play. *WA Innovator of the Year* is an example of a program that celebrates and raises the profile of successful innovators. Curtin's commercial innovation award scheme is also designed to raise awareness and reward people working towards commercial application of technology. Other programs include the Australian Academy of Technological Sciences and Engineering's *Clunies Ross Awards* and the *Prime Minister's Prize for the Commercial Application for Science*.
- High level advocacy and patronage of technology based entrepreneurship can also motivate activity. Having community leaders talking about the importance of innovation and celebrating the work of those involved can inspire others to action.

Commercial proof of concept funding

- Prototyping, commercial proof of concept, pilot trialling and business concept development can be required to package a technology into a form attractive to industry and investors. This is a high risk end of the investment market and historical returns provide little incentive to new entrants. Programs such as *Accelerating Commercialisation* (and its predecessors) and the *Innovation Investment Fund* contributed towards filling the void of funding in this area. Continual program changes and low levels of funding commitment limit the effectiveness of these programs.
- Some universities have recognised the gap in funding and established arrangements to make direct investments in this area. Curtin has an active Kickstart fund that provides early commercial seed funding. Appropriate incentives to encourage this behaviour, such as matched funding could be considered. The *Kiwinet* model in place in New Zealand (NZ) appears to be achieving success with this type of approach. *Kiwinet* is a collaboration between NZ Universities. Seed funding for commercial opportunities is provided by the NZ Government and is matched by the Universities and private sources. The model encourages collaboration and knowledge sharing between institutions and standardisation of commercialisation processes. It has the benefits of building skills and critical mass in commercialisation as well as directly supporting projects with commercial potential https://www.kiwinet.org.nz/.
- Follow on funding programs such as those used in the United Kingdom by the Engineering and Physical Sciences Research Council (EPSRC) and may also be worthy of consideration. Under these programs, additional funds can be allocated to successful projects to improve their commercial appeal and potential for impact.

Early stage venture capital:

- It is well known that the early stage technology investment market in Australia is not well developed. Mechanisms that encourage institutional and angel investors to participate in the market should be explored. The Israeli Incubator program has achieved success in supporting early stage technology based opportunities and promoting private investment in this space http://www.incubators.org.il/.
- Favourable tax arrangements such as those in place in Israel and the United Kingdom are models worthy of consideration. In Israel, non-residents are exempt from tax on gains derived from the sale of shares allocated to them by an Israeli-resident company in consideration for their capital investment, as long as the Israeli company was classified as a "R&D intensive company". See also the United Kingdom's Enterprise Investment Scheme http://www.hmrc.gov.uk/eis/.

- Programs that encourage international investors to visit and become familiar with the Australian market are another way to encourage investment. One example is the OzAPP Awards that attract investors from the United States and Europe to Perth to see the best new mobile web and cloud applications from the region www.ozapp.com.au.
- There are now a number of accelerator programs that have been established to provide early seed funding and access to expertise. Curtin has established a student accelerator program called Accelerate. The aim is to provide a small amount of seed funding, co-working space and access to networks to help students and alumni develop new business concepts. Support for greater collaboration across universities on these types of programs could help build critical mass and interest.

Experienced entrepreneurs

- Accessing the right people to guide the direction or an opportunity at an early stage has a significant influence on success or failure. Australia does not have a large pool of experienced entrepreneurs who have successfully built technology based businesses. However, there are many Australians working overseas in technology sectors and some return home for personal reasons. Developing and supporting networks, such as *Advance*, to make it easier to identify those who are in the market or interested in return, could improve access.
- Providing focal points for local entrepreneurs to network with experienced entrepreneurs and investors to access expertise and finance is also helpful. The *West Tech Fest* and *OzAPP Awards* are aimed at building this network. With further support, these programs could easily be built into high profile events with broad exposure in the community. The aim is to motivate and inspire the next generation of entrepreneurs and provide access to the resources required to help them succeed.

Industry experts and corporate customers

- Access to industry experts embedded in a particular market domain can provide valuable insights as to the potential interest in a new technology based product or service. How significant is the problem being addressed to the sector? What competitive solutions exist? What are the barriers to entry in a particular market? These are all questions that can be addressed by industry experts and provide valuable guidance for those developing new products and services. Networks that enable access to these experts are of value. The *Entrepreneurs Infrastructure Program* is considering mechanisms to develop and provide access to better networks. This is a particular challenge in an isolated market such as Perth. Raising the profile of events such as the *West Tech Fest* has the potential to attract experienced industry representatives to Perth so they can be accessed by local developers and entrepreneurs. Facilitating access to overseas markets through targeted travel and trade mission support is also worth investigating.
- *Lean* start up guru, Steve Blank is quoted as saying that no business plan survives first contact with customers. Mechanisms to encourage corporates to work with early stage technology providers and help hone the development of new technologies is of significant benefit. Programs such as ARC linkage grants have a role here. However, the limited application window and timeframes for accessing these grants are a problem. Reducing hurdles to accessing this type of funding would be of benefit. It is important that the scale of the grants is sufficient to make a meaningful impact and shift behaviour. It is questionable whether the current State Government's *Innovation Vouchers Program* is leading to meaningful outcomes and whether the funding could perhaps be better applied elsewhere.
- Open innovation platforms are a good mechanism for focussing activities of researchers around areas of interest to industry. Companies publishing areas of interest for in-sourcing technology is one way to do this. The pharmaceutical industry has a very sophisticated approach to this that could be used as a model in other industries.

- There are limited forums for industry to engage closely with public sector researchers. Targeted partnering initiatives that bring together technology developers with relevant industry groups should be supported. *Knowledge Commercialisation Australia* is currently developing a concept of working with existing industry bodies and conferences to include partnering components in their programs under the banner of "*Accessing Innovation*". Sessions will include an example of successful public sector research/industry collaboration, programs available to facilitate interaction such as R&D tax credit and EIP and some examples of quality projects seeking partners and investment. The first of these initiatives was successfully run in collaboration with Austmine 2015. There is another session planned to be held as part of LNG18 in Perth in 2016.

Curtin believes the potential to deliver a connected innovation ecosystem goes even further. As far back as a 2013 article in the influential German publication Der Spiegal, entitled: "Living by the numbers: Big data knows what your future holds" concluded: "*in many places, the mantra of data is extolled as the new "oil" or "gold" of the 21st century*." As Western Australia's ability to produce and analyse more data improves, so will our productivity and our competitive advantage. Industry is not entirely able to undertake massive scale data analytics projects alone and is now looking for new ways of engaging with universities in multidisciplinary, collaborative and innovative environments that can generate value from data. We are uniquely placed here in Western Australian given that we are hosts to one of the largest data analytic projects in the world, the Square Kilometre Array.

Scientifically, the project will address fundamental questions about the birth and evolution of galaxies, stars and planets developed some 13 billion years ago. To do this, the project is pushing the edge of our data capabilities and attracting significant human capacity and skills into WA.

It is this data analytics capacity that was key to Cisco's decision, with foundation partners in Curtin and Woodside, to establish the *Cisco Internet of Everything Innovation Centre* – the eighth in the world. The integration and openness that the Cisco Internet of Everything Innovation Centre model is based on is instructive in terms of how industry, academia, and small to medium enterprises and globally multi-national companies can interact to create an innovation ecosystem.

The sharing and identification of common drivers and problems, and a collaborative and deliberate path to developing solutions provides real worth.

We greatly appreciate the invitation to provide a submission to this inquiry and look forward to its report. I would welcome the opportunity to meet with the committee should you wish to discuss further any part of Curtin University's submission further.

Yours sincerely

Professor Deborah Terry AO
Vice-Chancellor