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Review of Australia's Innovation System

Submission by StartupAUS

Background

StartupAUS is a not-for-profit organisation formed in 2013 by leaders in the national startup community. Its mission is to foster and build a community of technology entrepreneurship in Australia, and to help make Australia a more supportive environment in which to launch and grow tech startups that will become globally meaningful companies.

Our comments in this submission are focused on tech startups, as defined below, and on the importance of startups to Australia as a means of economic diversification and economic growth.

In April 2014 StartupAUS released the Crossroads report, which contains a detailed analysis Australia's startup ecosystem in comparison with other countries, and makes a series of recommendations to address challenges that are hampering the growth and maturation of the sector.

The Crossroads report is provided as Appendix 1 to this submission, and is also available for download at www.startupaus.org/crossroads.

What are tech startups?

StartupAUS defines a tech startup (or *startup* for short) as an emerging high-growth company that is using technology and innovation to tackle a large and most often global market. Startups have two important defining characteristics:

1. Potential for high growth. Whilst not all startups will need to raise capital to grow, StartupAUS advocates an "investability test" as a proxy for high growth potential, in which the ability of companies to raise capital from professional, arms length investors is a good indicator of their growth potential. Professional investors recognise the high risk of failure in startups and therefore will only invest in opportunities capable of generating high returns to compensate for this risk.
2. Disruptive innovation. Startups are reshaping the way entire industries work by displacing established competitors through use of technology and business model innovation. The mere act of selling undifferentiated products or services online does not make a business a tech startup, and StartupAUS excludes such companies from its definition.

Importantly, startups are very different to small businesses. The term “startup” is widely recognised to mean an emerging high growth technology-based businesses as defined above, whereas a “small business” is generally considered to be a business that is providing less differentiated products or services, is often trading in a confined geographical area, and even if it experiences modest growth will most likely remain a small business.

Startups, on the other hand, start small but have the capacity to experience massive and sustained growth, often enabling them to become significant players in global industries within a small number of years.

Small businesses are important to any economy because they are numerous (there are around 2 million in Australia, of which two thirds have no employees) and they provide an income to a significant proportion of the workforce (they represent almost half Australia’s employment in the private non-financial sector)¹. However, small businesses are not a source of significant economic growth in the same way that startups are.

From an economic policy perspective it is vital to make a clear distinction between startups and small business because they have very different needs, as discussed below.

Why are startups important?

Startups are an important part of any country’s innovation system. They are recognised worldwide as important drivers of economic growth due to their potential to undergo massive growth in short periods of time, and their ability to disrupt large existing industries.

In the US, high-growth venture capital-backed companies, of which there are 24,000, account for 21% of GDP (\$3.1 trillion in revenue) and 11% of private sector employment (12 million jobs).² In Israel, 70% of economic growth has been attributed to high-growth, venture capital-backed technology companies.³ The US and Israel are just two examples of countries that have embarked on a deliberate and sustained effort to develop a knowledge economy with a particular focus on companies that can grow rapidly using external capital.

According to Enrico Moretti, Professor of Economics at the University of California Berkeley, and an expert on the future of economic growth, technology-based jobs have a larger multiplier effect than jobs in any other sector. Moretti found that for each new technology-based job, five additional jobs are created in other sectors.⁴ He notes that this multiplier effect is three times larger in the technology sector than in extractive industries or traditional manufacturing. This multiplier is one of the reasons that employment in the US technology sector has grown at 25 times that of other parts of the economy.

Moretti highlights a snowball effect in which regions that spawn a number of large technology companies generate their own attractive pull that makes that region more conducive to attracting further knowledge-intensive companies and workers.

A study by the Kauffman Foundation⁵ found that 3 million new jobs are added to the US economy each year by new firms, while over an extended period existing firms have been net job destroyers, losing a total of 1 million jobs per year. The same study found that the 4% of companies with the highest growth are responsible for creation of over 70% of all new jobs.

¹ ABS, bit.ly/1nKFW0

² www.nvca.org

³ http://www.city-journal.org/2009/19_3_jewish-capitalism.html

⁴ Enrico Moretti, *The New Geography of Jobs*: Mariner Books

⁵ <http://www.kauffman.org/what-we-do/research/firm-formation-and-growth-series/the-importance-of-startups-in-job-creation-and-job-destruction>

Similar results were reported in the OECD Science, Technology and Industry Scoreboard 2013 which shows that over an extended period, including during the global financial crisis, new businesses have consistently been net job creators whilst existing business have ben net job destroyers.

Furthermore, technology-based companies are consistently able to generate jobs with much higher labour productivity (revenues per employee) than any other sector.

The economic objective is of course not to create startups, but to create large, globally significant and sustaining companies that drive economic growth and prosperity, and create large numbers of high-value jobs. These companies are, by definition, startups in their early years.

Startups and Australia's Innovation System

A number of highly influential books^{6,7,8} have been written about the conditions that are required in order for startup ecosystems⁹ to flourish. The general consensus is that successful startup ecosystems require the following eight conditions:

1. A pro-entrepreneurship culture
2. Guidance from experienced entrepreneurs
3. A supportive regulatory environment
4. A collaborative business culture
5. Visible successes and role models
6. Risk tolerance
7. Availability of capital
8. Technical skills

Australia's fledgling startup sector has experienced a groundswell of activity over the last three years. There is much enthusiasm, strong growth in the number of accelerator programs, increased media interest and increased awareness of startups. We have also seen a growing number of Australian technology companies begin to achieve meaningful global scale, such as Atlassian, Freelancer, BigCommerce, 99designs and Halfbrick Studios.

However, Australia does not currently have all of the required conditions for an ecosystem that supports successful startups. Their establishment has been hampered to varying degrees by market failures spanning education, culture, expertise, access to capital and regulatory environments.

Below is a summary of the current state of play in Australia with regard to each of the startup ecosystem conditions.

Ecosystem condition	Current status in Australia
Pro-entrepreneurship culture	Australia has a relatively low rate of tech startup formation in a global context. One of the reasons for this is the limited exposure the general public has to high-growth entrepreneurship, combined with a culture that does not celebrate or promote an entrepreneurial mindset. Entrepreneurship is seen as an unusual career path, and even when children are exposed to the notion of starting their own company they are generally guided toward creation of small businesses rather than globally scalable companies.

⁶ *Blue Sky Mining: Creating Australia's Next Billion Dollar Industries*, Adrian Turner

⁷ *Startup Communities: Building an Entrepreneurial Ecosystem in Your City*, Brad Feld

⁸ *The Rainforest: The Secret to Building the Next Silicon Valley*, Victor Hwang and Greg Horowitz

⁹ The set of economic, environmental and regulatory conditions within which startups operate

Ecosystem condition	Current status in Australia
Guidance from experienced entrepreneurs	<p>Our ability to create startups that succeed on a global scale is heavily dependent on having experienced mentors, investors and advisors who have first-hand experience in taking tech companies global. The current lack of experienced startup entrepreneurs in Australia is a chicken-and-egg problem that is limiting growth in the sector.</p>
Supportive regulatory environment	<p>StartupAUS believes there are two regulatory issues that require immediate reform in Australia:</p> <p>Tax treatment of Employee Share Schemes (otherwise known as Employee Stock Ownership Plans or ESOPs)</p> <p>Employee share schemes are an essential ingredient to a successful startup ecosystem, and are in widespread use in every successful startup ecosystem in the world.¹⁰</p> <p>In most countries, options are taxed in the year in which the option is exercised. However, a bizarre situation exists in Australia in which options are taxed in the hands of the employee at the time of issue, rather than at the time they received the proceeds.</p> <p>In this regard Australia is out of step with the rest of the world. The current tax treatment of ESOPs is having a detrimental impact on Australia's ability to attract and retain the best workers.</p> <p>In June 2013 the government committed to reviewing the taxation treatment of ESOPs. StartupAUS urges the government to ensure that the review is completed in as short a timeframe as possible and that it fully addresses the problem and makes Australia's tax laws at least as favourable as those in other countries.</p> <p>StartupAUS provided a submission to the government's review of Employee Share Schemes. The submission is available for download from the StartupAUS web site.¹¹</p> <p>Enablement of crowd-sourced equity funding for startups</p> <p>Crowd-sourced equity funding has the potential to be a valuable tool for startups as it will extend the pledge-based crowdfunding model to enable companies to raise small amounts of capital from a large number of individual investors, increasing the speed with which promising startup ideas can be funded and unlocking capital from many more investors. It will also enable investors to commit small amounts of capital to a large number of companies, thereby spreading risk and facilitating early stage investment from individuals who do not have the capacity to back a portfolio of startups via angel investment.</p> <p>StartupAUS believes that equity crowdfunding is well on its way to becoming an established, mainstream means of raising capital, and already enabling legislation has been passed in a number of countries including the United States, UK, Canada, Italy, France and New Zealand. It is clear that for Australian startups to compete on an equal footing we will need a regulatory environment at least as favourable as other countries in which crowd-sourced equity funding is enabled.</p>

¹⁰ Pollenizer, from Little things, Startup Genome, Deloitte (2012) – "Silicon Beach : Building Momentum"

¹¹ <http://startupaus.org/resources/submissions/>

Ecosystem condition	Current status in Australia
Collaborative business culture	<p>According to the Australian Innovation System Report (2011), "Collaboration and networking have long been cited as consistent weaknesses in the Australian innovation system, compared with other OECD countries."</p> <p>Similarly, the OECD Science, Technology and Industry Scoreboard (2011) ranked Australia 29 out of 30 OECD nations in collaboration on innovation.¹²</p> <p>According to the ABS, only 2.4% of innovation-active Australian businesses collaborated with universities in 2008-09, ranking Australia 23rd out of 25 OECD countries.¹³</p>
Visible successes and role models	<p>In its 2012 Review of Venture Capital and Entrepreneurial Skills,¹⁴ the government identified the importance of promoting successful Australian companies, noting that "Australia has had a number of big successes which are contributing to Australia's future industries and the economy more broadly but which are not well known outside the Australian scientific and venture capital communities."</p> <p>Startups that achieve significant scale before achieving a liquidity event (or <i>exit</i>) via IPO or acquisition are important because they create wealth and experience that can be recycled back into the startup ecosystem via formation of new startups and invest in others.</p> <p>If Australia is to grow a vibrant startup ecosystem it is essential that we create an environment that is conducive to the creation of successful startups, and to retention of those companies for long enough that we can benefit from their economic and societal impact.</p> <p>It is worth noting that among Australia's most promising technology companies a significant part of their operations are typically offshore, most of their capital is sourced offshore, their management teams are often based offshore, and in some cases the business has been domiciled offshore.</p>
Risk tolerance	<p>Australia is in many respects a highly risk tolerant nation. We have a rich history of investing in speculative mining and exploration stocks, and on a per capita basis more Australians gamble than in any other country.¹⁵</p> <p>However, Australians have yet to embrace entrepreneurial risk, as evidenced by the fact that a large proportion of startups founded here are at the lower end of the risk-reward curve. They are often focused on small niches, domestic markets, or are based on a business model with early revenue generating opportunities, with relatively few truly disruptive high-risk startups that are tackling sizeable global markets.</p> <p>This may be due in part to Australian entrepreneur demographics. In Australia a large proportion of first-time entrepreneurs are in their thirties and forties, with relatively few younger Australians engaging in creation of high-growth startups. Having young people become entrepreneurs is important because startups are high risk (most fail), and as a general rule an individual's risk tolerance decreases over time, particularly once they have a mortgage, a family and an established career.</p>

¹² OECD Science, Technology and Industry Scoreboard (2011)

¹³ ABS (2010) Innovation in Australian Business, 2008-09, cat. No 8158.0

¹⁴ <http://www.avcal.com.au/documents/item/516>

¹⁵ <http://news.bbc.co.uk/2/hi/asia-pacific/6313083.stm>

Ecosystem condition	Current status in Australia
Availability of capital	<p>A profound lack of early stage capital is one of the clearest market failures in the Australian startup ecosystem. As a nation Australia is significantly below many other developed countries in terms of deployment of early stage capital, despite having the world's fourth largest pool of superannuation funds under management at \$1.4 trillion.¹⁶</p> <p>A lack of early stage capital has a direct impact on the rate of formation of startups, since aspiring startup founders are acutely aware of the challenges associated with raising capital in Australia, and also on the success of those startups that are formed.</p> <p>Angel investment</p> <p>Angel investment¹⁷ is the most common source of first-round funding for startups, and typically a precursor to raising larger amounts of funding from venture capital funds.</p> <p>In 2012 there were 10 angel investor groups active in Australia that collectively invested just \$22m in 40 startups.¹⁸</p> <p>Although informal angel investment is not tracked in Australia, we have one of the lowest rates of organised angel investment in the developed world at \$1.01 per capita, compared to Sweden (\$42), Canada (\$12) and the UK (\$11).</p> <p>Notably, New Zealand has approximately six times Australia's level of angel investment (\$6.07 per capita), due largely to sustained investment by the New Zealand government in creating an environment conducive to tech startups, including creation of a \$37 million seed co-investment fund aimed specifically at simulating greater levels of angel investment.</p> <p>Venture capital investment</p> <p>Australia has one of the lowest rates of VC investment into startups in the developed world. In 2013 Australian venture capital funds invested \$79 million across 97 seed, startup and other early stage deals.^{19,20}</p> <p>On a per capita basis, VC investment in startups in Australia is currently \$5.00 per capita per annum, compared to \$181 in Israel, \$90 in the United States, \$21 in South Korea, \$16 in the UK and \$5.32 in New Zealand.</p>

¹⁶ <http://www.theaustralian.com.au/business/wealth/apra-says-total-superannuation-pool-worth-14-trillion-at-june-3/story-e6frgac6-1226550483075#mm-premium>

¹⁷ Investment in startups by high net worth individuals investing their own funds, typically \$100k to \$500k (as opposed to VC in which a fund manager invests funds placed by institutional investors such as superannuation funds – typically \$2-10m).

¹⁸ <http://www.startupsmart.com.au/growth/what-does-an-australian-start-up-need-to-get-investment-nicta-new-ventures-director-crunches-the-numbers/2013121911406.html>

¹⁹ <http://www.startupsmart.com.au/growth/what-does-an-australian-start-up-need-to-get-investment-nicta-new-ventures-director-crunches-the-numbers/2013121911406.html>

²⁰ AVCAL 2013 Yearbook

Ecosystem condition	Current status in Australia
Technical skills	<p>Australia is currently near the bottom of the OECD in producing graduates in Science, Technology, Engineering and Maths (STEM) disciplines.</p> <p>In particular, ICT skills will be vital if Australians are to capitalise on the digital economy by creating products that can compete globally. The computerisation of many industries has also meant that demand for ICT skills is not limited to the ICT industry, but is increasing across a wide range of industries and occupations.</p> <p>Australia is currently facing a significant skills shortage in the ICT sector, with demand for ICT workers having doubled over the period 1999 to 2012, whilst applications for tertiary ICT courses have dropped approximately 60% over the same period.</p> <p>The Australian Computer Society has estimated that an additional 35,000 ICT professionals will be needed over the next three years,²¹ which is three times the projected number of domestic ICT graduates from Australian universities over that period. At the same time data from the Department of Industry shows a decline in domestic ICT graduates of 52% between 2003 and 2010, with computer science majors currently representing just 2% of domestic graduates each year.</p> <p>Many Australian universities have downsized ICT courses and reduced teaching staff numbers, with some not undertaking the curriculum development necessary to ensure relevant skills are being taught.</p> <p>One of the impacts of this atrophy has been that more than 70% of ICT students drop out and do not complete their studies. According to the Department of Industry, of the 16,000 students who commenced an IT degree in 2009, only 27% graduated in 2012.</p>

Summary of recommendations

Below is a summary of the actions proposed by StartupAUS to accelerate the growth of Australia's startup ecosystem. Each of these actions is discussed in detail in the Crossroads report.

The impacts from some of the actions will be seen in the near term, although most will take several years to have a positive effect and will require a long term bipartisan commitment.

It should be noted that the majority of the actions are not new. They have been implemented in other countries in which similar market failures have been identified, and in many cases have been effective to the point that government intervention can be scaled back or withdrawn.

StartupAUS does not believe that the government should be required to make an open-ended commitment to supporting the startup sector, but rather it should develop an exit plan for scaling back and ending its support of each part of the ecosystem.

²¹ <http://www.startupsmart.com.au/leadership/how-to-hire-staff/tech-start-ups-lament-labors-living-away-from-home-crackdown/201202135361.html>

Actions with near-term impact (1-2 years)

Action	Rationale	Crossroads Reference
Create an Entrepreneur Visa	Australia's startup sector needs diversity and new skills. An entrepreneur visa, like those in place in many other countries, would help to attract entrepreneurs and accelerate the growth of our startup ecosystem.	Action 1.4
Relax restrictions on 457 visas for startups	Australian tech startups are unable to recruit enough skilled Australian ICT workers. Relaxing restrictions to the 457 visa would enable Australian startups to employ sufficient skilled overseas ICT workers to meet the current shortfall.	Action 3.4
Ensure foreign workers in Australian startups can access the Living Away From Home Allowance	Australia has a relatively high cost of living that is acting as a disincentive for foreign ICT professionals to join Australian startups. Making the LAFHA program available to startups would help to ensure Australian startups are able to attract the highest calibre workers.	Action 3.5
Implement a national Visiting Entrepreneurs Program	Australia has a relatively shallow pool of experienced entrepreneurs. Introducing this expertise from startup hot-spots around the world would short-circuit the learning curve and accelerate the maturation of the startup ecosystem.	Action 4.1
Change the tax treatment of ESOPs	Bringing the tax treatment of ESOPs in line with the rest of the world would greatly improve Australia's ability to attract and retain the best workers.	Action 6.1
Extend the Advance Innovation Program	Each year the Advance Innovation Program provides 25 promising Australian tech startups with investor-readiness training and mentoring, and takes them to Silicon Valley for a two week trade mission. Extending the program would enable more entrepreneurs to gain exposure to Silicon Valley and other startup hot-spots, and to bring those learnings back to Australia.	Action 7.1
Establish a Silicon Valley Landing Pad for Australian startups	An increasing number of Australian startups are moving to Silicon Valley in search of talent and capital. An Australian landing pad would greatly assist these companies in getting established in the Valley and improve their chances of success. It would also equip more Australian entrepreneurs with an international perspective and enable them to contribute positively to the Australian startup ecosystem when they return home.	Action 7.2

Actions with medium-term impact (2-5 years)

Action	Rationale	Crossroads Reference
Support a Young Entrepreneur Scholarships program	Offering scholarships to 100 final year university students per annum would encourage more young people to launch startups. This could also be an effective way of addressing the current gender imbalance in the startup sector.	Action 1.2
Support entrepreneurial behaviour by university researchers	Most Australian universities have limited engagement in the startup sector, and the academic culture does not embrace entrepreneurship and risk-taking. Supporting entrepreneurship in universities would increase the rate of startup formation and improve the economic contribution made by universities.	Action 1.3

Action	Rationale	Crossroads Reference
Support a national network of student startup incubators	Very few university students in Australia are exposed to the notion of doing a startup. A network of student startup incubators would raise the profile of entrepreneurship and boost the number and success rate of technology entrepreneurs among university students and graduates.	Action 2.2
Launch a national learn to code promotion program	Australia is facing a significant skills shortage in the ICT sector. A promotional program would increase interest in studying ICT and help to address the gender imbalance in the sector.	Action 3.2
Implement a tertiary scholarships program to drive participation in CS education	A prestigious scholarship program would attract the brightest high school students to tertiary computer science education, and the best undergraduates to advanced postgraduate studies in computer science.	Action 3.3
Remove disincentives for experienced Australian entrepreneurs to repatriate	A growing cohort of Australians are acquiring valuable experience in building a global technology companies in the US and elsewhere. There are significant tax disincentives for successful Australians to repatriate. Removing these disincentives would encourage Australian entrepreneurs to return and use their international expertise to benefit the Australian startup ecosystem.	Action 4.2
Create a national network of entrepreneurship centres	Unlike many countries, Australia has no centrally supported system of startup incubators. Creating a network of entrepreneurship centres would provide an important piece of soft infrastructure around which startup communities can be built.	Action 4.3
Continue the Innovation Investment Fund program	Australia has one of the lowest rates of venture capital investment in the world. Continuing the IIF program, with targeted changes, will ensure it is effective in supporting the growth of a healthy VC industry in Australia. [In the latest budget the government announced that it will abolish the IIF program. StartupAUS urges the government to consider other options for stimulating Australia's flagging venture capital sector.]	Action 5.1
Establish a seed co-investment fund	Australia has one of the lowest rates of angel investment in the world. Establishing a co-investment fund would stimulate greater levels of angel investment and improve the chances of startups raising capital in Australia rather than moving to the US or elsewhere at the outset.	Action 5.2
Create a capital gains exemption and/or tax deduction for angel investments	A tax incentive for angel investors would boost the level of investment in startups and bring Australia into line with many other knowledge-intensive economies.	Action 5.3

Action	Rationale	Crossroads Reference
Enhance Commercialisation Australia to improve support for entrepreneurs	Commercialisation Australia is a valuable program that is currently constrained in its ability to effectively support startups. Making targeted changes to the program would allow it to more effectively accelerate the growth of Australian startups. [In the latest budget the government announced that it will abolish Commercialisation Australia and launch a "Commercialising Ideas" stream as part of the new Entrepreneurs Infrastructure Program, albeit with around half the funding. StartupAUS urges the government to consult with the startup sector before launching the "Commercialising Ideas" stream of the EIP to ensure that it is as effective as possible in supporting high growth-potential startups.]	Action 5.4
Establish a young entrepreneurs startup loans scheme	A startup loans scheme would provide financial support to first-time entrepreneurs under the age of thirty. It would help young entrepreneurs to bridge the funding gap for early stage ideas that are not yet ready to raise capital from angel investors or VC funds.	Action 5.5
Implement legislative changes to enable crowd-sourced equity funding	By 2020, crowdfunding is projected to reach \$500 billion per annum, generating \$3.2 trillion a year in economic impact and creating more than 2 million jobs. If Australian startups are to tap into this source of funding the regulatory environment will need to be changed to enable crowd-sourced equity funding in Australia.	Action 6.2

Actions with long-term impact (5-15 years)

Action	Rationale	Crossroads Reference
Support a national program to raise awareness of startups in Australia	Australians are good at starting <i>small businesses</i> but we have a relatively low rate of <i>tech startup</i> formation. A national awareness program would increase the number of people engaging in startups and help to establish a vibrant culture of entrepreneurship in Australia.	Action 1.1
Implement a national program of entrepreneurship education	Currently the Australian education system is geared toward preparing students for the workforce. Introducing entrepreneurship education across the primary, secondary and tertiary education system would equip young people to start businesses and spur economic growth.	Action 2.1
Implement and extend the Digital Technologies Curriculum	Ensuring that computer science is taught in every primary and high school will bring Australia in line with other countries and allow us to compete with the growing talent pool in other countries.	Action 3.1

Australia's current policy settings

The Australian government's investment in supporting the national startup ecosystem is extremely modest, particularly when compared with its direct support for diminishing returns industries such as the automotive industry (subsidies of \$30 billion in the past 12 years, including \$2.17 billion directly to General Motors Holden),^{22,23} the mining industry (subsidies of \$4.5 billion per year²⁴ including \$2 billion per year in fuel tax credits to mining companies),²⁵ and assistance packages in the hundreds of millions of dollars a year to other sectors and individual businesses.

Startups have been recognised worldwide as a massive contributor to economic growth and a source of high value job creation, and for this reason almost every developed nation in the world is systematically investing in the development of ecosystems to support the formation and growth of startups.

It is highly conspicuous that the Australian government's support for the startup sector is decreasing at a time when the rest of the world is increasing its investment in this sector.

A lack of available early stage funding has long been recognised as a profound market failure affecting startups in Australia. The government's decision to abolish the Commercialisation Australia program and the Innovation Investment Fund in the latest budget was therefore of great concern to StartupAUS and the Australian startup community.

The reduction in grant funding available through the Commercialising Ideas stream (both by reducing the total funding pool and by capping grants at \$250,000) has greatly reduced the funding available to startups. StartupAUS prepared a submission as part of the government's consultation process for the Entrepreneurs Infrastructure Program. It can be downloaded from the StartupAUS web site.²⁶

The Innovation Investment Fund has been the government's primary means of stimulating venture capital activity in Australia. Whilst the program had some clear deficiencies, it is of grave concern that the government has discontinued it without any indication of how (or whether) it will now seek to support the creation of a viable venture capital industry in Australia.

In combination, the removal of these two programs will undoubtedly lead to a further reduction in the availability of capital to startups in Australia. StartupAUS expects that this will result in an acceleration of the existing trend toward Australian startups leaving Australia in search of more favourable funding environments.

The government scrapped these two programs shortly after the Commission of Audit recommended they be abolished on the grounds that "skills and finance can be acquired from the private sector, and there is no clear reason for the Commonwealth to provide this assistance in competition with private sector providers". That the Commission should come to such a conclusion, or that the government should accept it, is beyond belief.

²² <http://www.smh.com.au/business/comment-and-analysis/the-end-of-uggboot-economics-why-the-consumer-is-now-in-charge-20140227-33k0d.html>

²³ <http://www.abc.net.au/news/2013-04-02/holden-reveals-billions-in-subsidies/4604558>

²⁴ <http://www.abc.net.au/news/2013-06-25/nrn-dist-mining-subsidies/4778042>

²⁵ <http://www.theguardian.com/environment/southern-crossroads/2014/feb/02/fossil-fuel-subsidies-tony-abbott-spc-ardmona-corporate-welfare>

²⁶ <http://startupaus.org/resources/submissions/>

Observations from previous reviews

The Australian government has produced or commissioned several substantial reviews of aspects of the innovation ecosystem. These include:

- Review of the National Innovation System (2008) by a panel chaired by Dr Terry Cutler, culminating in the *Venturous Australia* report²⁷
- The government's *Powering Ideas* paper²⁸ (2009) that responds to the *Venturous Australia* report
- An Independent Econometric Analysis of the Innovation Investment Fund²⁹ (2010)
- Innovation System Reports³⁰ (2011, 2012 and 2013) produced by the Department of Industry
- Review of Venture Capital and Entrepreneurial Skills³¹ (2012) prepared by The Treasury and the Department of Industry, Innovation, Science, Research and Tertiary Education
- An update to the Digital Economy Strategy – *Advancing Australia as a Digital Economy*³² (2013) by the Department of Broadband, Communications and the Digital Economy

StartupAUS has reviewed the findings of the above reports pertaining to the startup sector and believes that whilst many of the fundamental issues have been identified (and in some cases explored in great detail), the government still does not possess a coherent innovation strategy to deliver Australia's transition to a knowledge economy.

In fact, as noted recently by Australia's Chief Scientist, Professor Ian Chubb, Australia is one of only three countries in the OECD without a science or innovation strategy.³³

We wish to comment specifically on two of the reports identified above.

***Venturous Australia* report (2008)**

The *Venturous Australia* report presented the findings of a comprehensive Innovation System Review conducted in 2008, and made 72 recommendations spanning innovation policy, education, research, capital markets, taxation and culture, within the overarching theme that Australia needed to place significantly greater emphasis on innovation as an economic growth engine.

The report's author, Dr Terry Cutler stated: "We are entering an era when the global economy is being transformed before our eyes, with huge local implications. Innovation is pre-eminent in this transformation. New players are emerging, and around the world small countries like our own, which have already grown rich on the spoils of innovation, are renewing their commitment and redoubling their efforts. We need to take a long term view and respond with sound investments in terms of strategies for Australia."

Dr Cutler went on to note that "the architecture of Australia's existing national innovation system is now a generation old. It requires reappraisal and the policies it comprises require renewal, refurbishment, recasting and in some cases re-imagining."

²⁷ <http://www.industry.gov.au/science/policy/Pages/ReviewoftheNationalInnovationSystem.aspx>

²⁸ http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/BudgetReview200910/Science

²⁹ <http://www.innovation.gov.au/industry/VentureCapital/Pages/IndependentEconometricAnalysisOfIIF.aspx>

³⁰ <http://www.innovation.gov.au/science/policy/AustralianInnovationSystemReport/AISR2013/wp-content/uploads/2013/11/AIS-Innovation-Systems-Report-2013-v3.pdf>

³¹ <http://www.avcal.com.au/documents/item/516>

³² http://www.archive.dbcde.gov.au/2013/september/national_digital_economy_strategy

³³ <http://www.smh.com.au/national/education/business-council-calls-for-urgent-education-overhaul-20140725-zvnqh.html#ixzz38p6L2tOd>

Unfortunately most of the important recommendations that are relevant to startups were not acted upon by the government, despite several potential courses of action having been canvassed in the *Powering Ideas* response paper drafted by the government in 2009.

Reflecting on the government's lack of action on the recommendations in the report, Dr Cutler stated in November 2010 that "Dust accumulates on the report of the review I chaired into the state of the national innovation system, *Venturous Australia*. My perverse consolation is that dust is equally accumulating on the government's response to that review, *Powering Ideas*."³⁴

Advancing Australia as a Digital Economy (2013)

The government's digital economy paper recognised, *inter alia*, the limited availability of capital for Australian startups and difficulties in attracting and retaining talent as impediments to growth in the startup sector.

Two actions were identified specifically to support digital startups, namely:

- **[Action 7]** Review the regulatory arrangements for employee share schemes; and
- **[Action 8]** Consult on an Australian crowd-sourced equity funding scheme.

StartupAUS endorses addressing these two areas as promptly as possible, and further commentary on both is provided in Section 6 of the Crossroads report.

Disappointingly, the digital economy paper is heavily skewed toward technology *adoption* with little emphasis on technology *creation and commercialisation* as a driver of economic growth. The actions set out in the digital economy paper are mainly aimed at addressing regulatory barriers – which is an important but narrow part of the required solution. There is little in the strategy to stimulate growth in the technology sector despite clear evidence of systemic market failures.

Australia needs a central innovation agency

Our observation is that one of the reasons Australia does not have a coherent innovation strategy is that it does not have a single department or agency with responsibility for innovation policy and programs.

Responsibility seems to fall somewhere between the Department of Broadband, Communications and the Digital Economy, the Department of Industry and the Department of Treasury. There has also been significant upheaval of innovation policy and programs on several occasions as a result of changes in government.

There are clear reasons why responsibility for "digital" startups might best sit within the Communications portfolio given its strong digital focus. However, responsibility (and funding) for industry policy and programs currently sits largely within the Industry portfolio.

StartupAUS urges the government to consider the creation of a dedicated agency with responsibility for innovation policy and programs – in a similar vein to New Zealand's Callaghan Innovation³⁵, the UK's Technology Strategy Board³⁶, Sweden's VINNOVA Governmental Agency for Innovation Systems³⁷ and Singapore's Standards, Productivity and Innovation Board (SPRING)³⁸.

³⁴ <http://www.crikey.com.au/2010/11/08/terry-cutler-the-dearth-and-decline-of-innovation/>

³⁵ <http://www.callaghaninnovation.govt.nz/about-us/new-zealand-innovation-system>

³⁶ <https://www.innovateuk.org>

³⁷ <http://www.vinnova.se/en/>

³⁸ <http://www.spring.gov.sg/AboutUs/Pages/SPRING-Singapore.aspx>

StartupAUS wishes to be part of the solution

StartupAUS would welcome the opportunity to engage with the Senate Standing Committee as it undertakes its review of Australia's innovation system. We can contribute a first-hand understanding of the issues facing Australia's startup sector as well as a wealth of knowledge of programs that have been effective in boosting the startup ecosystems in other countries.

We believe that Australia has an unprecedented opportunity to transition from an economy based on resources, primary industries and domestically focused businesses to one based on high-growth knowledge-intensive businesses that can compete globally. That transition will require the development of an innovation system that is supportive of high growth startups and that genuinely places innovation and entrepreneurship as a central part of the country's economic growth strategy.