CROSSROADS

An action plan to develop a vibrant tech startup ecosystem in Australia

Authored and produced by StartupAUS

Supported by Google

This report was officially launched in
Sydney at International Towers, Barangaroo,
on 1 December 2016

StartupAUS is supported by Lighthouse Sydney.

// Contents

// Foreword

Paul Bassat

Board member of
Innovation & Science Australia and
non-executive director of Westfarmers

Historically Australia was said to ride on the sheep's back, and our more recent prosperity is thanks to our mineral wealth. Our future prosperity will be a function of the dedication, ingenuity and resilience of our great innovators.

"In the past, the journey has been a difficult one for Australian founders. Over the last few years we have seen that landscape begin to change rapidly"

If Australia becomes a major player in the global technology ecosystem over the next generation then we will look back at the current period as the key inflection point. Conversely if we fail to take advantage of the current momentum then we will look back with regret at missed opportunities.

Over the last 25 years a handful of Australian startups have grown into truly meaningful global companies. In the past, the journey has been a difficult one for Australian founders, with few support structures in place. Over the last few years we have seen that landscape begin to change rapidly.

Developing a cohort of new, globally relevant startups is a key imperative for Australia. In this context the contribution of StartupAUS and this report is vital.

Globally, innovative startups are creating the sort of jobs that Australia needs in order to prosper; they are highly productive, high paying and offer rewarding careers. These jobs are by and large being created in the location where these companies are being founded. Australia therefore needs to be a leading participant, not a spectator, in the global technology ecosystem. Productivity growth and the creation of new highly productive jobs will be the key to continued national prosperity.

At the same time as technology is creating these high value new jobs, many other jobs are disappearing. Unfortunately we have limited capability to prevent this. The complex reality is that jobs will disappear in all parts of the world but many of the new jobs being created will be concentrated in specific regions. As a result it is a critical imperative for Australia to build world class startup businesses, to ensure future-facing jobs are being created here.

"Globally, innovative startups are creating the sort of jobs that Australia needs in order to prosper; they are highly productive, high paying and offer rewarding careers."

The great news is that we are seeing unprecedented focus and momentum in supporting innovation and developing our technology ecosystem. We are seeing great bipartisan leadership at a political level, the level of funding for startups is growing, we are seeing the emergence of more accelerators and incubators and most importantly more people are taking the plunge and starting companies that are solving important problems. There are a lot of reasons for us to be optimistic. We need to remind ourselves, however, that Australia is not operating in a vacuum. As this report demonstrates, many other countries are also focused on achieving similar outcomes. We need to make progress just to maintain our position, and will have to make extraordinary progress to become a major player globally. This is a challenge we must embrace if we want our children and grandchildren to enjoy the same opportunities we have enjoyed. It is also critical that the opportunities and benefits are spread as widely as possible across the whole community.

We need to proceed with a sense of urgency while at the same time thinking long term. The investment we make now will deliver benefits over a twenty to thirty year period. Our decision making needs to be focused on achieving long term, sustainable outcomes, not a short term sugar hit. We have the necessary raw ingredients to become a major technology player globally. We need the long term focus and commitment at all levels in our community to achieve the results that we aspire to.

The recommendations in this report represent important, positive steps we can take towards building for the future. They address core areas in which we must improve.

At the risk of being overly simplistic, we can try to distill the key imperatives down to a few simple themes; a radical reassessment of our school and university curricula at all levels, more startup capital, and targeted government policies. If we do these things it will provide us with a great foundation. It is axiomatic though that the key element for future success is that we need a larger proportion of our best and brightest founding and joining startups. Anything we can do to encourage this outcome is incredibly valuable. This report provides credible, actionable proposals for addressing each of these areas.

Paul Bassat is one of Australia's most successful entrepreneurs. In 1997 he co-founded SEEK, which he grew into one of Australia's largest tech companies before his departure in 2011. Paul is now a tech investor, running one of Australia's largest venture capital firms, Square Peg Capital, which he co-founded in 2012. He sits on the Board of Innovation and Science Australia and is a non-executive Director of Westfarmers.

// About StartupAUS

StartupAUS is Australia's national non-profit startup advocacy organisation, formed in 2013 by 50 leaders of the startup sector.

Our mission is to transform Australia through technology entrepreneurship. In practical terms, that means we want to make Australia one of the best places in the world to build and grow a tech startup. StartupAUS seeks to do this by catalysing a major shift in attitudes in Australia from being consumers of technology to being creators of technology and using technology companies as a driver of economic growth.

We believe innovative, high-growth businesses will play a crucial role in driving prosperity for Australia in the years to come. Technology is changing the world rapidly, and our economy is no exception. StartupAUS seeks to help Australia get ready for, and make the most of, that technology-driven shift.

To achieve this goal, StartupAUS engages with all levels of government to help shape economic policy discussions with the objective of better supporting the creation and growth of technology startups to become globally significant companies as part of Australia's much needed transformation to a knowledge-intensive economy.

StartupAUS is supported by volunteers from the startup community around Australia who are responsible for organising grassroots efforts and coordinating community activities. It gratefully acknowledges the support of its community members, the corporate partners who made this report possible, and its lead organisational sponsors Salesforce and Google Australia.

// About the author

Colin Kinner is director of Spike Innovation, a consulting firm that specialises in development and implementation of programs to build startup ecosystems and support the growth of tech startups.

He has advised a range of private and public sector organisations on startup ecosystem development and entrepreneurship programs, and has authored the annual Crossroads report for StartupAUS since its inception in 2014.

Colin is also an experienced entrepreneurship educator, having delivered startup training and coaching to hundreds of aspiring entrepreneurs. He is founder of Startup Onramp, a training program that gives aspiring founders of high-growth startups the essential skills to launch and grow their company.

Colin has previously run a startup incubator, served on the boards of a number of venture-backed technology companies, and managed early stage venture funds in Australia and the UK.

// Edited by

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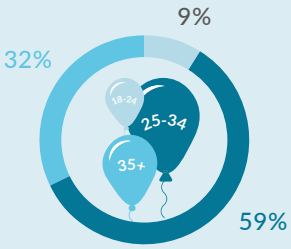
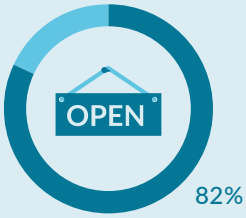
Alex Gruszka
Data and Insights,
StartupAUS

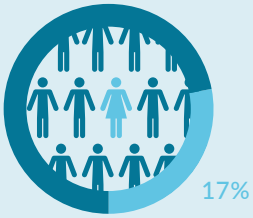
// A snapshot of Australia's most successful startups



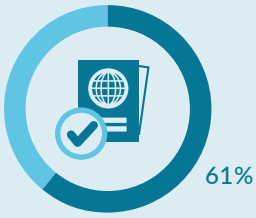
Founding age of Australia's most successful entrepreneurs



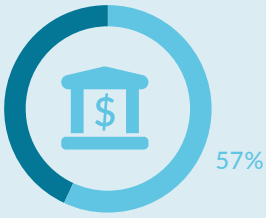
Percentage of founders from successful startups that had founded a previous company



Percentage of startups with at least one female founder



Startups founded by immigrants or children of immigrants



Startups that took advantage of government grants at some point in their development

AUSTRALIA VS U.S.A

Companies with less than 500 employees

AUSTRALIA		U.S.A
67%	Company engagement	72%
=	Encouragement to be innovative	=
61%	Companies acting on innovative ideas	69%

AUSTRALIA

Less than 500 employees		More than 500 employees
68%	Company engagement	62%
74%	Encouragement to be innovative	69%
63%	Companies acting on innovative ideas	58%

Global Tech Companies less than 5 Years Old		Global Tech Companies more than 5 Years Old
78%	Company engagement	72%
72%	Encouragement to be innovative	67%
71%	Companies acting on innovative ideas	68%

Sources: Data supplied by Culture Amp, and StartupAUS / UTS research of high-value startups
Results drawn from public data and information supplied by the companies.

Sample companies included Canva, Assetic, Global Kinetics, Reffind, Surfstitch, Ingogo, LocalMeasure, SocietyOne, BuildingIQ, Freelancer, Edentiti, Call Out, Menulog, Catch Group, Shoes of Prey, Rezdy, Siteminder, Temando, Prospa, Envato, Aussie Commerce, Campaign Monitor, Kogan, Vinomofo, 3P Learning, Redbubble, Moula, Saftey Culture, Smart Sparrow, Catapult Sports, Culture Amp, OpenAgent, Expert360, Airtasker, DesignCrowd, Stockspot, Nano-Nouvelle, Data Republic, Hey You, Equitise, Jayride, Atlassian, Invoice2Go, Ausra, Areva Solar, Tyro, C-learning, Big Commerce, 99 designs

EXECUTIVE SUMMARY

Crossroads is the most detailed review ever undertaken of the Australian startup ecosystem, and has had a significant influence on innovation policy relating to startups at all levels of government since it was first published in 2014.

The landscape for Australian startups has changed substantially since Crossroads 2015 was released 18 months ago. These changes have come about as a result of accelerated growth in the national startup ecosystem and a notable bipartisan nationwide political shift towards innovation and entrepreneurship. This report includes a comprehensive analysis of the environment in which Australian startups operate and provides concrete and comprehensively researched recommendations drawing on both local experience and international best practice.

Importantly, this edition of Crossroads includes commentary on the raft of startup-friendly measures announced by the Federal Government in its National Innovation and Science Agenda (NISA) in December 2015.

The StartupAUS Board commends the government on its commitment to transitioning Australia 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, and is confident that NISA can be the first step in that journey.

However, even accounting for the positive steps announced in the National Innovation and Science Agenda, Australia still has a lot of catching up to do. We are currently ranked 19th in the world in the Global Innovation Index, lagging behind countries including New Zealand, South Korea, Singapore and Canada. In fact, our ranking is declining.[1]

A recent report by PwC predicted that Australia's economy will drop ten places in world rankings by 2050, taking Australia out of the G20 and placing us behind countries such as Bangladesh, Egypt, Iran, Pakistan, Philippines and Thailand.[2] PwC's predictions of an economic slump were based on an assessment that Australia has for many years under-invested in developing a knowledge-intensive economy.

Similarly, the latest Global Competitiveness Report ranks Australia 22nd overall (down from 21st in 2015) and 26th in innovation, noting that

"Australia remains far behind the world's innovation powerhouses" and "not only lags far behind the best performers but also loses ground to them".[3]

[1] www.globalinnovationindex.org
[2] www.pwc.com.au
[3] www.weforum.org

A lack of investment in innovation has affected all parts of the Australian innovation system, but none more profoundly than the startup ecosystem. Startups are highly mobile, and will move to locations that best support their growth. Australia has witnessed a continuing trend for our fastest-growing technology companies to leave in search of talent, capital and more favourable regulatory environments.

Over the last two decades many countries have recognised that startups are important drivers of economic growth, and a growing number of governments have responded by launching programs to invest systematically in the creation, support and retention of high-growth companies.

For example, the Chinese Government has established an A$8.3 billion seed-stage National Venture Capital Fund and directly supports many of the country's 2,000 startup incubators.[4] South Korea is implementing its A$4 billion Creative Economy initiative which includes converting over 1,000 public libraries into innovation centres.[5] India's government recently launched a A$2 billion fund to stimulate greater levels of venture capital investment, along with a range of tax incentives for startups and investors as part of the government's plan to reshape the Indian economy.[6] The government of Thailand recently announced the creation of a A$750 million venture capital fund which will provide funding to 2,500 early stage Thai startups and other high growth companies, and is part of a raft of measures aimed at quadrupling the number of startups in the country by 2018.[7]

The National Innovation and Science Agenda, and future policies that stem from it, can help turn around Australia's historical under-investment in supporting startups. We have a window of opportunity in which to stem the flow of startups leaving Australia for other countries, and to improve the chances of success of Australian startups by creating an environment that supports them through their entire life-cycle.

Startups represent a huge opportunity for Australia, and have the potential to contribute over $100 billion to GDP and create over half a million new jobs by 2033.[8] Technology companies are disrupting many mainstream industries including those in which Australia has existing strengths. StartupAUS recently published a report highlighting just one such example: agriculture, which can - with the help of technology - become Australia's next $100bn export industry.[9] According to Deloitte, 65% of the Australian economy is based on industries that are facing significant disruption.[10] Australia has an opportunity to engage in the creation of those companies that will disrupt global industries, and to reap the economic rewards. If we fail to take action we will be relegated to looking on as our core industries are disrupted by startups from other countries.

4 technode.com
5 online.wsj.com
6 fortune.com
7 techinasia.com
8 digitalpulse.pwc.com.au
9 startupaus.org
10 deloitte.com

This report makes the case that as a nation we need to build on the positive start made by NISA and continue to invest in programs that will accelerate the maturation and growth of our startup ecosystem. Australia is currently one of the smallest players in the race to produce global technology companies, but we have the capacity to become a much larger force in the global innovation race as long as we make a long-term, ambitious, bipartisan commitment.

This report contains a total of 14 recommended actions. These recommendations are arranged thematically and are not listed in order of priority. The intention is to provide a framework for identifying effective, impactful policy measures. These policy measures span governments at all levels and are presented as a targeted set of viable, effective actions to address identified weaknesses in the system. They were developed after broad consultation with the startup community and innovation policy experts, and informed by a comprehensive review of international best practice.

In StartupAUS's view, each recommendation, if thoughtfully implemented, would have a substantial impact on the development of the startup ecosystem in Australia. We would emphasise that getting the implementation right is important – delivering a limited number of these proposals comprehensively would have greater impact than implementing a broad range ineffectively.

We have deliberately kept most of the recommendations relatively high level to enable readers to engage with the rationale rather than getting stuck on the detail. We will continue to work proactively with government at all levels to support consultative, detailed policy design for measures which are ultimately adopted.

// Recommended actions

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// THEME 1 Startup ecosystems need to be geographically concentrated

RECOMMENDATION 1:

Support the establishment of innovation districts in major cities

The programs that provide advice and mentoring to startups, including incubators, accelerators and co-working spaces, are geographically dispersed in Australian cities, and becoming more so as new programs are created. A national network of ambitious innovation districts in major cities would act as a focal point for startup-related activities and events, address the current fragmentation of offerings, and provide valuable opportunities for collaboration between startups and larger technology companies.

// THEME 2 Australia needs a coordinated innovation & entrepreneurship plan

RECOMMENDATION 2:

Create a national innovation agency

Australia does not have a single agency with responsibility for oversight and delivery of innovation policy and programs. A national innovation agency would address the current fragmentation of innovation policy and expenditure, and give much-needed focus to Australia's efforts to transition to a knowledge economy.

// THEME 3 Startups need capital to grow

RECOMMENDATION 3:

Improve the R&D Tax Incentive by making it more favourable to startups

The R&D Tax Incentive is the government's largest innovation-focused program. It could be made significantly more effective with minimal increase to the overall program cost by increasing a portion of the refundable tax offset and paying it quarterly for early-stage startups.

// THEME 4 Startups need access to world-class expertise

RECOMMENDATION 4:

Implement a national *Entrepreneurs-in-Residence* program

Australia faces a chicken-and-egg problem with regard to successful entrepreneurs advising new startup founders, and it will take some time to organically build up a large cadre of experienced entrepreneurs who can cycle back into the startup ecosystem to guide new entrepreneurs. A prestigious national Entrepreneurs-In-Residence program would engage a series of internationally experienced entrepreneurs, angel / VC investors and startup advisors to provide much-needed guidance to early stage Australian startups.

RECOMMENDATION 5:

Make targeted improvements to Employee Share Schemes legislation

The long-awaited changes to Employee Share Schemes (ESS) in Australia were well received by the startup community, and substantially achieved the policy outcomes desired. However, under the current arrangements there remain two fundamental issues that require attention in order for Employee Share Schemes to achieve their full potential. Addressing these would remove the remaining bugs in what is otherwise a world-class system.

RECOMMENDATION 6:

Implement and improve the Entrepreneur Visa

The Australian startup ecosystem is relatively immature and lacks depth of entrepreneurial experience. An Entrepreneur Visa would help to attract the best and brightest entrepreneurial talent and skills to Australia, particularly if the visa is designed to attract experienced entrepreneurs and has realistic expectations regarding qualification requirements.

RECOMMENDATION 7:

Establish a program to attract promising international startups to Australia

Australia can be an attractive destination for foreign startups, however internationally there is still limited appreciation of the breadth and depth of startup activity that exists here, with many attitudes influenced by tourism campaigns that portray Australia as a holiday destination. In parallel with implementation of an Entrepreneur Visa, an international business development capability would help to inform promising startups from around the world about the benefits of establishing in Australia and encourage them to move here.

// THEME 5 Tech startups need tech talent

RECOMMENDATION 8:
Extend the Digital Technologies Curriculum

The Digital Technologies Curriculum is Australia's first coordinated effort to teach computer science in every primary and high school. Extending the Digital Technologies Curriculum to make computer science and computational thinking a mandatory component of the school curriculum in years 9 and 10, and an elective subject in years 11 and 12, would make it consistent with trends in computer science

RECOMMENDATION 9:
Relax restrictions on 457 visas for startups

Rapidly growing Australian tech startups are unable to recruit enough skilled Australian IT workers. Relaxing restrictions on the 457 skilled migration visa would help Australian startups employ sufficient skilled international talent to meet the current skills shortfall.

RECOMMENDATION 10:
Implement measures to counteract high cost of living for foreign skilled workers

Australia has a high cost of living that is currently acting as a disincentive for overseas talent to accept offers of employment with Australian startups. Making public schooling freely available for the children of 457 visa holders and reintroducing the Living Away From Home Allowance would defray some of the living costs of foreign workers and help Australian startups attract world class talent. education in other countries and would prepare more young Australians for future-facing jobs.

// THEME 6 Australia needs more entrepreneurs

RECOMMENDATION 11:

Implement entrepreneurship programs in all Australian primary and secondary schools

For the most part Australian children are not exposed to the notion of starting their own company during their school years. Supporting the delivery of entrepreneurship programs in schools would expose large numbers of children to basic entrepreneurship concepts and instil an interest in business creation before they reach university.

RECOMMENDATION 12:

Implement entrepreneurship programs in all Australian universities

Despite a recent spike in interest in startups, Australia has a relatively low rate of tech startup formation in a global context. Implementing comprehensive entrepreneurship exposure and education programs would enable universities to expose large numbers of students to startups and entrepreneurship, and produce graduates who have the capability to create technology-based companies that will underpin Australia's future economic growth workers to meet the current skills shortfall.

RECOMMENDATION 13:

Introduce a Startup Scholarship for STEM graduates

Too few Australian STEM graduates are pursuing careers as entrepreneurs, due in part to a lack of awareness of the opportunities that exist. A prestigious scholarship program to encourage high performing STEM graduates to join or form a startup within their first 3 years of graduating would boost the level of startup formation and lead to repeat entrepreneurs whose startup experience equips them well to continue their entrepreneurial journey later in life.

RECOMMENDATION 14:

Immerse Australian university students in Silicon Valley and other startup hubs

An overseas startup immersion program for university students would place at least 200 students per year in Silicon Valley and other startup hotspots around the world, and would be effective in developing a vibrant entrepreneurial culture and inspiring students to become entrepreneurs.

The following matrix provides a breakdown of the above recommendations by ease of implementation and impact. Recommendations in the top right quadrant are those which would be highly impactful and relatively straightforward to implement in terms of cost, time, and complexity.

Crossroads sets out to provide concrete, actionable, effective policy options that will address barriers to continued growth of the Australian startup ecosystem and provide a basis from which to produce many globally significant technology companies in the years to come.

StartupAUS is committed to working closely with all parts of the Australian startup ecosystem, including entrepreneurs, corporates, universities and all levels of government, to develop and implement policies and programs to systematically grow Australia's technology sector so that it can drive economic prosperity for future generations.

// The StartupAUS board

Alex McCauley
Director and CEO StartupAUS

Teresa Engelhard,
Director StartupAUS
Director, RedBubble

Alan Noble
Director StartupAUS
Engineering Director, Google Australia

Wayne Gerard
Director StartupAUS
Founder and CEO, RedEye

Bill Bartee
Director StartupAUS
Managing Director, Blackbird Ventures

Glenn Smith
Director StartupAUS
Founder and Managing Director, ATW Capital

Andrew Larsen
Director StartupAUS
Director, HealthEngine

Topaz Conway
Director StartupAUS
Chair, Springboard Enterprises Australia

Peter Bradd
Director StartupAUS
CEO, The Beanstalk Factory

THE AUSTRALIAN STARTUP ECOSYSTEM

// The Australian startup ecosystem at a glance

// What are "startups"?

StartupAUS defines a tech startup (or startup for short) as a young high-growth company that is using technology and innovation to tackle a large, probably 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, arm's 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.

StartupAUS has a particular focus on the opportunities presented by the internet as an enabler of growth, but recognises that startups can be based on cutting edge technology in any field including engineering, biotech, pharmaceuticals, energy, hardware and software. Many of the observations and recommendations in this document are relevant across all technology sectors, and StartupAUS strongly supports the notion of a diverse Australian economy that draws upon a wide range of skills and technologies. Emerging technologies, and the startups based on them, have the potential to transform sectors across the economy.

"Startups can be based on cutting edge technology in any field including engineering, biotech, pharmaceuticals, energy, hardware and software."

// Why are startups important?

Startups represent an important part of the future growth of the Australian economy. In the coming years, technology is set to deliver vast economic opportunities as well as substantial disruption of mainstream economic sectors. It is only with a strong startup sector, harnessing emerging technologies to deliver jobs and prosperity, that we will be able to manage that transition effectively.

Research undertaken by PwC found that startups have the potential to contribute over $100 billion to Australia's GDP and create over half a million new jobs by 2033.[11] This finding was based on an assessment that technology is profoundly changing many industries, leading to massive opportunities for new companies that will dominate the industries of the future, as well as significant threats for companies that fail to embrace technology.

Startups that grow to become globally significant business can create large numbers of high-value, knowledge-intensive jobs with high labour productivity. Australia will need more of these jobs over the coming two decades, a timeframe in which half of the world's current jobs will be replaced by software.

Startups also represent an opportunity for Australia to diversify its economy and generate export income that is not tied to the resources sector, which currently constitutes 64% of Australia's exports.

The internet is an enabler of massive growth, and by connecting three billion people it allows startups formed in any part of the world to instantly compete in global rather than domestic markets. A growing number of Australian startups are becoming recognised on the global stage – Atlassian, SEEK, Campaign Monitor, Freelancer, BigCommerce, Canva and Shoes of Prey to name a few, and many more are well on their way to achieving global prominence.

[11] digitalpulse.pwc.com.au

// Startups are not the same as small businesses

Startups are very different to traditional small businesses. The term "startup" is widely recognised to mean an emerging high growth technology-based business 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 growth will remain a small business over an extended period.

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) 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)[12]. However, small businesses are not a source of significant potential 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 businesses because they have very different needs.

[12] abs.gov.au

// What is a startup ecosystem?

A startup ecosystem is the complex set of forces that determine the economic environment in which startups are born and have a significant effect on their ability to succeed.

The participants in any startup ecosystem, and the forces they exert, include:

- Startups – including both their founders and their employees
- Incubators and accelerators – providing expertise and guidance, usually to first-time founders in the form of mentoring and coaching
- Investors – providing access to capital, networks and guidance
- Customers, in particular early adopters – providing startups with the opportunity to test whether their products and services meet a real customer need and to gain early market traction
- Government – which sets the regulatory environment and may also intervene to address specific market failures or accelerate economic change
- Universities – providing talented graduates and access to cutting edge intellectual property and research capabilities
- Advisors and service providers – providing specialist expertise (eg. legal, financial, PR) to startups as they grow

"In the same way as a biological ecosystem determines the fate of the organisms that live within it, the health of a startup ecosystem determines how easy it is for startups within it to form and flourish."

// What makes a successful startup ecosystem?

Successful startup ecosystems produce large numbers of startups that go on to become globally successful companies in their own right. Successful ecosystems are characterised by the following attributes:

1. Large numbers of startups
2. Ample supply of entrepreneurs
3. A strong pro-entrepreneurship and risk-tolerant culture
4. High quality incubators and accelerators run by teams with first-hand experience in scaling tech companies globally
5. Investors willing to invest at the various stages of growth of a startup (seed, Series A, Series B etc)
6. Collaboration with large companies
7. A supportive regulatory environment
8. Universities actively engaged in exposing students to entrepreneurship as a career path
9. High quality advisors who specialise in startups and are often willing to provide services at a discounted rate (or in return for equity) in order to work with the most promising companies
10. Intervention by government where there are identified gaps

In successful ecosystems the interests of the participants are aligned such that the success of each participant leads to the success of the startups and the ecosystem as a whole, thus avoiding behaviours that benefit one entity at the expense of others.

It should be clearly stated that the action plan outlined in this report is not about replicating Silicon Valley. It is increasingly accepted that any notion of creating another Silicon Valley is fundamentally flawed. However, StartupAUS believes that the success of regions such as Silicon Valley underscores the scale of opportunity that now exists to create globally meaningful technology companies anywhere.

// State of the Australian startup ecosystem in 2016

A lot has happened in the Australian startup ecosystem in the eighteen months since the last Crossroads report was published. This section provides a summary of notable developments in the ecosystem, including a sample of individual company milestones and an analysis of progress being made in each State.

// International context

Whilst it is important to review progress from year to year, we must be mindful that supporting startups has become an economic priority for governments in many countries. Australia's progress must therefore be measured not just internally, but also with reference to the rest of the world.

One important benchmark is the Compass Report on Global Startup Ecosystems,[13] which is the most comprehensive longitudinal study ever undertaken of international startup ecosystems. It is based on data from 11,000 surveys completed by startups, investors and other stakeholders around the world and over 200 interviews with investors and entrepreneurs. The latest Compass report released in 2015 included a detailed analysis of the startup ecosystems in twenty cities, plus commentary on several other cities outside the top twenty.

As shown in Figure 1, Sydney is the only Australian city to rank in the top twenty globally, although it has lost four places since 2012, moving from 12th to 16th. Melbourne was the only other Australian city studied in the report, and placed just outside the top twenty at 21st (down from 18th in 2012).

The Compass report makes the important observation that international policy efforts to support startup ecosystems have intensified in recent years, with particular progress having been made by countries

	Ranking	Performance	Market Reach	Funding	Talent	Startup Exp.	Growth Index
Silicon Valley	1	←	1	1	4	1	1	2.1
NYC	2	↑3	2	2	1	9	4	1.8
L.A	3	←	4	4	2	10	5	1.8
Boston	4	↑2	3	3	7	12	7	2.7
Tel Aviv	5	↓3	6	5	13	3	6	2.9
London	6	↑1	5	10	3	7	13	3.3
Chicago	7	↑3	8	12	5	11	14	2.8
Seattle	8	↓4	12	11	12	4	3	2.1
Berlin	9	↑6	7	8	19	8	8	10
Singapore	10	↑7	11	9	9	20	9	1.9
Paris	11	←	13	13	6	16	15	1.3
Sao Paulo	12	↑1	9	7	11	19	19	3.5
Moscow	13	↑1	17	15	8	2	20	1.0
Austin	14	NEW	16	14	18	5	2	1.9
Bangalore	15	↑4	10	6	20	17	12	4.9
Sydney	**16**	**↓4**	**20**	**16**	**17**	**6**	**10**	**1.1**
Toronto	17	↓9	14	18	14	15	18	1.3
Vancouver	18	↓9	18	19	15	14	11	1.2
Amsterdam	19	NEW	15	20	10	18	16	3.0
Montreal	20	NEW	19	17	16	13	17	1.5

[1] Figure 1: Top 20 startup ecosystems as ranked by Compass[14]

such as Singapore (gaining 7 places to move from 17 to 10) and India (Bangalore having moved up four places from 19 to 15) as a direct result of government investment in supporting startup ecosystems.

[13] startup-ecosystem.compass.co
[14] startup-ecosystem.compass.co

// Company milestones

Many Australian startups have achieved promising milestones, ranging from major public listings to closing funding rounds, achieving revenue growth targets and expanding into international markets. A selection of some of the most notable milestones is provided below.

- Atlassian (developer of team collaboration tools) listed on the NASDAQ, valuing the company at A$8 billion. Atlassian is on track to achieve revenues of A$800 million this year.
- Canva (design platform) raised A$21 million from investors including Woody Harrelson, Owen Wilson and existing investors Blackbird Ventures, Matrix Partners, and Vayner Capital, valuing the company at A$165 million. The company now has over five million users worldwide and more than 70 staff working in its offices in Sydney and Manila.
- Envato (marketplace for creative assets) reached $400 million in transaction volume since its launch in 2006, and now has 300 employees and seven million users spread across 150 countries.
- Freelancer (ASX-listed freelancing marketplace) reached 18 million users from 247 countries, acquired Escrow.com for $10 million and grew headcount to 500 employees. Freelancer now has 470 employees working its offices in Sydney, Vancouver, London, Buenos Aires, Manila, Southern California and Jakarta.
- Prospa (online small business lender) raised a A$60 million Series B round from investors including The Carlyle Group, Ironbridge Capital, Entrée Capital, AirTree Ventures and David Fite.
- Airtasker (online job outsourcing marketplace) closed a A$22 million funding round led by Seven West Media. Since formation in 2012 the company has raised a total of $32 million, grown its community to 600,000 members and grown transaction volume to more than $40 million per year.
- Ingogo (mobile payments for transport industry) raised a A$12 million Series C funding round (including A$4.2 million from equity-crowdfunding platform VentureCrowd), valuing the company at close to $100 million.
- HealthEngine
- Invoice2Go (mobile invoicing for small businesses) raised a A$15 million Series C round from Ribbit Capital and Accel Partners, bringing total funds raised to A$50 million.
- Menulog (online food ordering) was acquired by UK-based Just Eat for A$855 million in May 2015.

// Company milestones (cont)

- Tyro (financial technology company) raised a A$95 million funding round led by Tiger Global, TDM Asset Management and Atlassian co-founder Mike Cannon-Brookes. The funds are being used to increase the company's engineering team from 150 to 450 employees. Tyro was the first Australian tech company to receive a banking license from the Australian Prudential Regulatory Authority (APRA), and currently processes over A$8 billion in transactions each year from 14,000 Australian businesses.
- SafetyCulture (safety inspection software) raised a A$30 million Series B round from investors including US-based Index Ventures, Australian VC fund Blackbird Ventures and Atlassian co-founder Scott Farquhar.
- Shoes of Prey (custom designed shoes) closed a A$20 million funding round from BlueSky Venture Capital, Greycroft and US retailer Nordstrom, moved its headquarters to LA, shipped its six millionth pair of shoes, and opened design studios in six Nordstrom stores in the US.
- Vinomofo (online wine ordering) raised a A$25 million funding round from Australian VC fund Blue Sky Ventures to continue its expansion.
- RedBubble (marketplace for artists) raised A$40 million in its ASX listing in May 2016, and is currently valued at over A$180 million.
- Catapult Sports (ASX-listed sports analytics company) acquired two sports technology companies (Boston-based XOS Technologies and Irish firm PlayerTek) for a combined A$84 million. The company is currently valued at over A$340 million.
- Culture Amp (employee analytics company) closed a A$13.5 million funding round with US and Australian investors to fuel its international expansion plans.
- Afterpay (financial technology company) listed on the ASX in May 2016 and has since doubled its share price. Its current market capitalisation is A$146 million.
- Whispir (communications software company) closed an A$11.75 million Series A round in September 2016. The round was led by Telstra Ventures and two Singaporean funds, NSI Ventures and Rippledot Capital. The company, which now has a global team of 86, is using its Singapore office to expand into Asia.

// Ecosystem milestones

The Australian startup ecosystem is in the midst of a period of strong growth. Over the last 18 months, interest in startups has continued to grow, as has the quality of startups being formed. As a result, there have been concerted efforts to grow the soft infrastructure that supports startups – including incubators, accelerators and co-working spaces, and greater levels of capital have flowed into the sector from angel investors and venture capital funds.

Notable milestones include:

- More venture capital was raised by Australian VC funds than in any previous year, including substantial new funds raised by Blackbird Ventures ($200m), Square Peg Capital ($200m), AirTree Ventures ($250m), Brandon Capital ($200m), Uniseed ($50m) and Reinventure ($50m), as well as funds currently being raised by Blue Sky Funds ($200m) and the Group-of-Eight Universities ($200m).
- Australian superannuation funds First State Super and HostPLUS invested in the Blackbird Ventures fund, providing early evidence of a renewed interest from the Australian superannuation sector in backing Australian venture capital fund managers. Two large superannuation funds also made up a substantial portion of the latest AirTree fund.
- Fishburners (startup co-working space) announced plans to relocate to a new Sydney CBD location with four times its current floor space and capacity to house over 400 startups, and has established startup co-working facilities in Brisbane and Shanghai.
- The Queensland Government launched its $180 million Advance Queensland initiative aimed at supporting innovation-intensive industries and startups, and added a further $225 million in new funding in its 2016-17 budget.
- The Victorian Government announced a $60 million funding commitment to support the State's startup ecosystem by providing funding for hard and soft infrastructure to support startups through the newly established launched LaunchVic.
- The NSW Government announced plans to establish a nine hectare innovation district on the site of the White Bay power station.
- The NSW Government announced $25 million funding to establish the Sydney School for Entrepreneurship, a joint venture between NSW universities and TAFE NSW aimed at providing practical training, support and mentoring to local tertiary students.

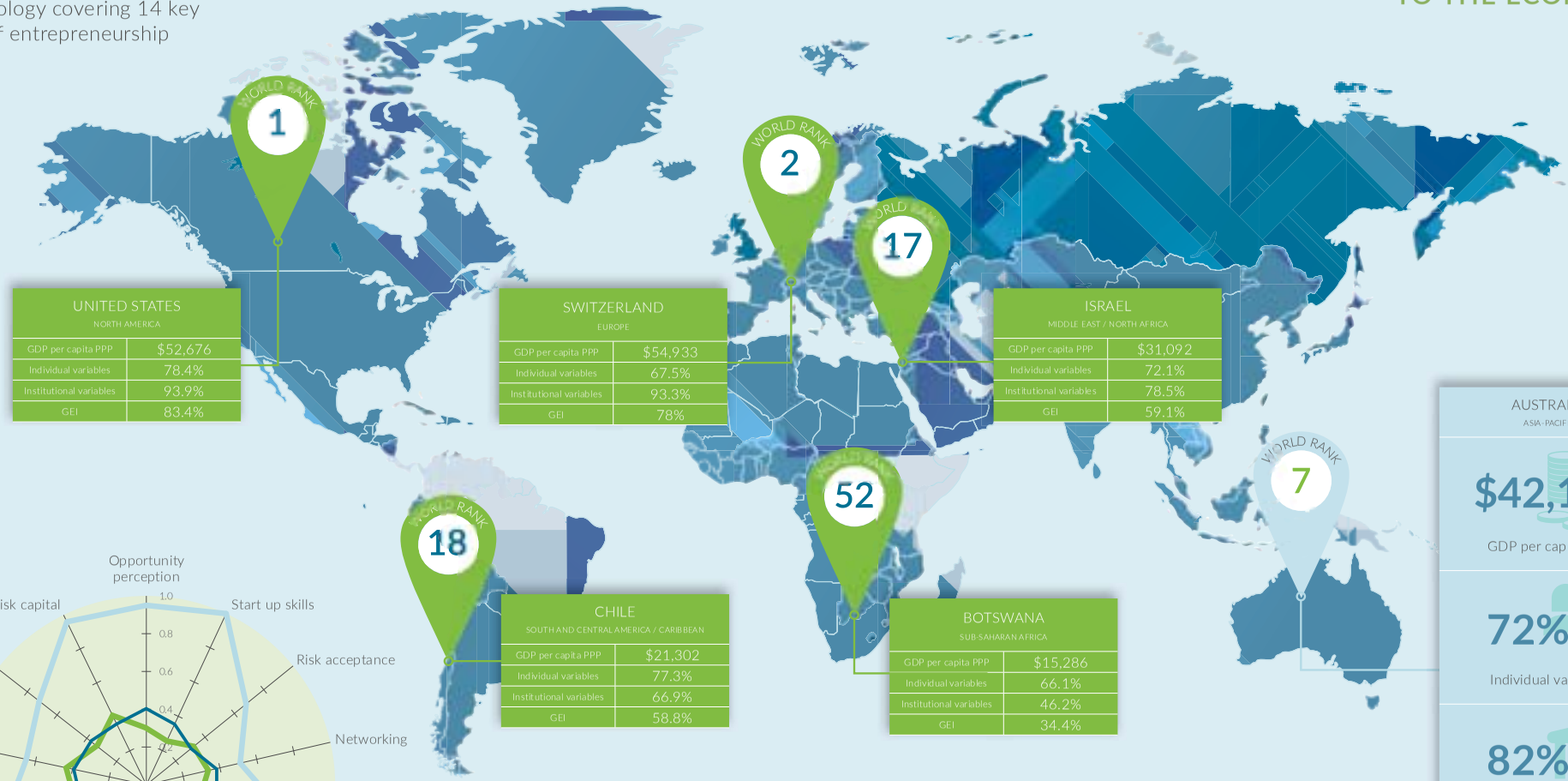
// Ecosystem milestones (cont)

- The City of Sydney released its Tech Startups Action Plan containing 41 initiatives aimed at supporting the growing tech startup ecosystem in Sydney.
- Jobs for NSW announced a $10 million grant funding program to support local accelerators and incubators and $3 million in grants of up to $25,000 for pre-revenue startups and up to $100,000 for revenue-generating startups.
- TechSydney formed as an organisation dedicated to the development of the growing startup ecosystem in Sydney. It successfully completed a $500,000 crowd-funding campaign.
- Fintech startup hub Stone and Chalk launched in Sydney, making it the second major fintech hub in the city, housing over 90 fintech startups, and announced plans to establish a similar hub in Melbourne.
- A number of global tech companies announced plans to establish offices in Australia – notably GoPro, Zendesk and Slack (Melbourne) and Tilt (Sydney).
- MassChallenge, one of the world's largest not for profit accelerator programs, established a 'bridge' program linking Australia to its global program with the support of Microsoft Australia, the Federal Government, and the State governments of South Australia, New South Wales and Victoria.
- The University of New South Wales announced plans to establish a $100 million Torch Precinct in partnership with the Chinese Ministry of Science and Technology, supported by eight Chinese companies and funding from the Federal Government. The precinct will be located on the UNSW Kensington campus and will open in 2025.
- The Startup Catalyst program, a Silicon Valley immersion program for young entrepreneurs, expanded to six international missions per annum with financial support from the Queensland Government and backing from entrepreneur and investor Steve Baxter.
- The Lighthouse, a new startup community in Sydney, was announced in December 2016. The Lighthouse will aim to foster a community in the heart of Sydney's newest commercial centre with an open and egalitarian environment focused on the needs of entrepreneurs.

// Global entrepreneurship rankings

These rankings represent the relative health of entrepreneurial ecosystems around the world, based on a rigorous methodology covering 14 key pillars of entrepreneurship

IMPROVING THE CONDITIONS FOR ENTREPRENEURSHIP BY **10%** COULD ADD **$170 BILLION** TO THE ECONOMY



UNITED STATES	
NORTH AMERICA	
GDP per capita PPP	$52,676
Individual variables	78.4%
Institutional variables	93.9%
GEI	83.4%

SWITZERLAND	
EUROPE	
GDP per capita PPP	$54,933
Individual variables	67.5%
Institutional variables	93.3%
GEI	78%

ISRAEL	
MIDDLE EAST / NORTH AFRICA	
GDP per capita PPP	$31,092
Individual variables	72.1%
Institutional variables	78.5%
GEI	59.1%

CHILE	
SOUTH AND CENTRAL AMERICA / CARIBBEAN	
GDP per capita PPP	$21,302
Individual variables	77.3%
Institutional variables	66.9%
GEI	58.8%

BOTSWANA	
SUB-SAHARAN AFRICA	
GDP per capita PPP	$15,286
Individual variables	66.1%
Institutional variables	46.2%
GEI	34.4%

AUSTRALIA	
ASIA-PACIFIC	
GDP per capita PPP	$42,149
Individual variables	72%
Institutional variables	82%
GEI	73%

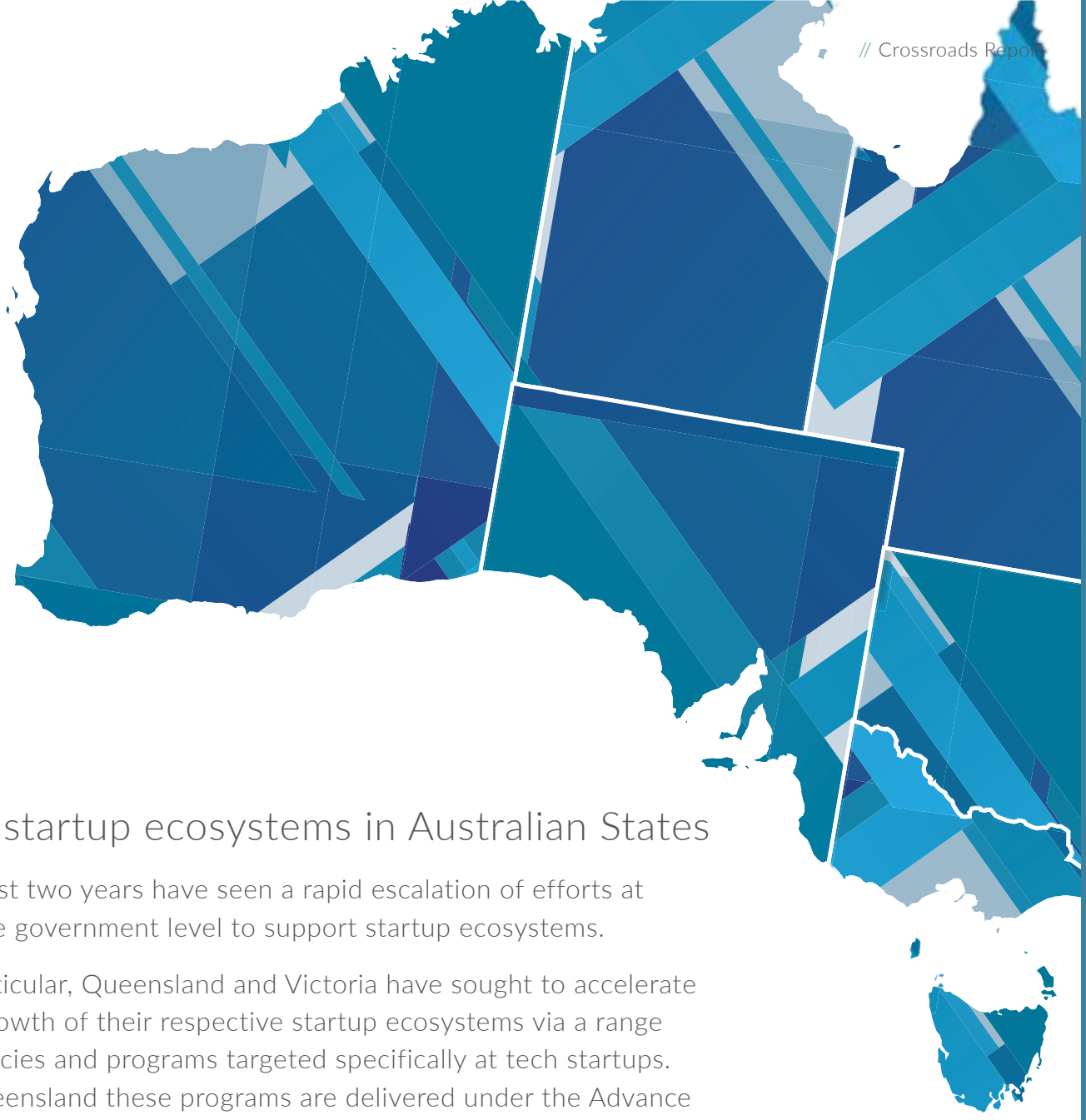
// Australia's 14 Pillar Performance

Human capital	.94	Opportunity perception	.95
Competition	.53	Start up skills	1.00
Product innovation	.59	Risk acceptance	.68
Process innovation	.77	Networking	.51
High growth	.65	Cultural support	.75
Internationalization	.72	Opportunity start up	.88
Risk capital	.96	Technology absorbtion	.77

1
Australia ranks 1st out of 24 countries in Asia-Pacific

7
Australia ranks 7th in the world out of 132 countries

GEDI Global Entrepreneurship Index
Report 17 = www.thegedi.org



// The startup ecosystems in Australian States

The last two years have seen a rapid escalation of efforts at a State government level to support startup ecosystems.

In particular, Queensland and Victoria have sought to accelerate the growth of their respective startup ecosystems via a range of policies and programs targeted specifically at tech startups. In Queensland these programs are delivered under the Advance Queensland program which received an initial funding commitment of $180 million over four years, and in Victoria via the newly formed LaunchVic which has funding of $60 million over four years.

South Australia has also recently announced plans to establish a $60 million co-investment fund as part of a broader suite of startup-focused initiatives under development.

Unfortunately other States have made less progress in developing substantive startup-focused programs.

The following summaries of the startup ecosystems in Australian states have been contributed by leaders in those respective ecosystems, and highlight the diversity of the Australian startup landscape.

// The startup ecosystem in Queensland

Contributed by

Chris Woods,
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It's been an incredibly exciting year for Queensland entrepreneurs, and we've seen what appears to be an exponential growth in an appreciation and interest in startups amongst both politicians and the general public. And, while I've only been covering the ecosystem for two years with Tech Street Journal, there's been a level of energy and political engagement I know would not have been present even five years ago.

The biggest development by far has been the Queensland Government's Advance Queensland initiative, which has created a range of funding, educational, employment and networking opportunities in the space. Impressively, it has also appeared to collaborate with members of the industry and respond to their needs, particularly with regional participation and the need for better access to entrepreneurial and STEM education within the state. The next big phases for the program are similarly exciting propositions; the state-wide Hot DesQ initiative, which provides out of state startups capital and networking incentives to move to hubs across the state, and Brisbane's Startup Precinct, which will be based in Fortitude Valley with the already established partner River City Labs. While we have heard less about it, plans from Brisbane City Council for another innovation centre, this one called The Capital, are also heartening.

In other areas, it's been gratifying to see the rise of regional communities and the strong sense of collaboration between entrepreneurs across the state. While relatively large cities like Cairns, Toowoomba and Townsville have hosted communities and startup events for years now, they have certainly matured into better established ecosystems and created strong connections over the past year with coordinated events like Startup Weekend Queensland and local livestreams of Brisbane's massive Innovation and Investment Summit, which attracted representatives from around the state as well as a range of presentations and speakers (the biggest name being Apple Co-Founder Steve Wozniak). Cairns has been especially impressive, with theSPACE's 10-week Emerging Entrepreneurs Program, which provides students with basic business skills, gaining traction amongst local schools and universities. Even more impressive has been the rise of smaller regional communities, notably Mackay and Rockhampton, which have developed both growing communities and announced plans for innovation hubs. This has all be helped by the industry's push for a more connected and collaborative state ecosystem (see: ilab's regional roadshows), which has historically been fragmented and directionless.

But while the growth in government attention is a cause for celebration, it naturally brings with it a bunch of political challenges. For a while now, the elephant in the room at startup events has been the apparent lack of collaboration between the Queensland and Brisbane governments in their designs for startup hubs. While I can't comment on any of the politics and can understand the difficulty of linking two massive, yet-to-be realised projects across two different levels of government, it is disappointing that these two hubs have been planned independent of one another, especially given that the state's ecosystem is more connected now than ever and collaboration is being so visibly celebrated. Currently, the Startup Precinct will be based in Fortitude Valley's T.C. Beirne Building with River City Labs, while The Capital will be located in Brisbane's Queen St Mall; this admittedly seems odd, considering the Mall's reputation as a retail and dining scene compared with the Valley's focus on creative agencies and established startups. The opportunity to plan the hubs together and base them within a central location that could better accommodate resource-sharing, or even combine the two projects into one even better innovation centre (as strange as that sounds in retrospect), appears to have been wasted.

Of course there's still time to fix this particular issue, and it's entirely possible that we simply haven't heard of plans to coordinate the initiatives (a problem in itself, obviously). Even if these hubs turn out to be disconnected, Brisbane's ecosystem will adapt and continue to grow, and hopefully the sense of collaboration that has seemingly defined this last year will overcome any political or geographical tensions.

// The startup ecosystem in New South Wales

Contributed by

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There have been a number of positive developments in the NSW startup ecosystem since the last Crossroads report was published in 2015, from the appointment of a dedicated State Minister for Innovation in Victor Dominello to the establishment of key startup infrastructure plays like Stone and Chalk, the Data Analytics Centre, and the Hunter Innovation Precinct – all of which see the tech industry in NSW in a better position than it has ever been.

Recent developments have seen NSW become home to almost half of Australia's startups- the last Startup Muster survey found that 44 percent of Australian startups alone are located in Sydney - the community still faces challenges.

A challenge for Sydney startups in particular focuses on lack of access to adequate real estate that, if provided, could easily address the proximity and density issue that many leading founders and investors in the community have identified as a major barrier to the evolving of a more natural and serendipitous startup culture.

This issue came to a head last November, when Atlassian lost the bid for the Australian Technology Park. The company had a vision for the site to become the heart of a thriving tech ecosystem in Sydney but the NSW Government instead chose to award the tender for the site to a consortium led by property developers Mirvac, whose plan for the site centres on building a new campus for anchor tenant Commonwealth Bank.

Looking to appease the tech community, the State Government then announced plans for the development of its own major innovation precinct at White Bay. The reaction from the community on this was swift, with leading figures highlighting the location's poor access to public transport, questioning the affordability of such prime real estate for startups, and the fact that it would take up until at least 2020 for any of this to come to fruition.

While real estate remains a problem, it can be said that various levels of government now have a better understanding of the startup ecosystem than ever before. The NSW Government for example was the first State Government to legalise ridesharing services and embrace the wider sharing economy, while Minister for Innovation Dominello has also worked with the community to develop a 'whole of government' Innovation Agenda. As well as supporting the existing startup community, the NSW Government has also shown it has an eye on the future, putting aside $25 million in its last Budget for a School of Entrepreneurship, bringing together students at university and TAFE to give them skills to build the businesses of the future.

At local government level too there has been support, with the City of Sydney Council working with the community over the past year to develop its Tech Startups Action Plan. The City's proposed projects include investigating the need for an entrepreneurship centre, which will provide a critical mass of office and event space for tech startups and the organisations that support it, as well as the creation of a Sydney tech startup festival to celebrate and promote the ecosystem, which will include digital tech education activities in the City's programs. Local governments in regional areas have also recognised the role tech and startups can play in their success, with Newcastle City Council throwing its support behind the development of the Hunter Innovation Precinct and Wollongong City Council helping to establish the Innovation Campus at the University of Wollongong.

Perhaps most importantly, however, the ecosystem itself has over the last year come together to look at how to spur the kind of collaboration and build the networks necessary to push Sydney back up the Global Startup Ecosystem Ranking, on which it fell from 12th to 16th place last year. This has culminated in the launch of TechSydney, a not-for-profit organisation brought to life by some of Australia's leading tech founders and community people with a mission statement focusing on the idea that though government is a part of the solution, entrepreneurs themselves have to be the drivers.

Core to TechSydney's goals is the creation of more, and more successful, tech companies based out of Sydney. An aspirational example of what's possible was the recent NASDAQ listing of Sydney-founded and based tech giant, Atlassian, widely regarded as one of the strongest IPO's of 2015. Key to this success were the strong fundamentals that Atlassian, and many other Sydney-based startups share. Other breakout stars to have done the same include Campaign Monitor and one of the darlings of the next generation of Australian startups, Canva, who have shown incredible growth and garnered amazing support from global tech heavyweights like Guy Kawasaki, who recently joined the company as Chief Evangelist.

Kawasaki was not the only industry legend to build connections with Sydney recently though. Apple co-founder Steve Wozniak joined the faculty at the University of Technology Sydney and has publicly announced his intention to become an Australian citizen when permitted.

The fact that one of the world's most recognised and respected engineers has come to Sydney is not surprising though. The quality of Sydney's engineering talent was a key component of its position in the top 20 global tech ecosystems in the recent Global Startup Ecosystem Rankings – again not completely surprising considering that Sydney is home to one of Google's largest global engineering centres having been the home of projects like Maps and Wave. While that all sounds fantastic there are even more promising signs for Sydney.

Available venture capital has increased 8x since 2012 (including the return of expat Aussie VCs from the UK and US) and supporting dealflow for this new capital is being generated through the creation of globally relevant industry specific clusters. Sydney has already positioned itself as a renowned global FinTech hub. An Edutech industry body, Edugrowth, is pulling together the ecosystem components to create more global edutech successes like SmartSparrow and 3PLearning. Similarly, plans for a MedTech hub, to be centred around Sydney's Westmead Hospital, are in development with the aim of creating more world-leading Sydney-based MedTech successes, like Cochlear and ResMed.

Universities are also starting to play a role as programs such as Incubate Usyd, Hatchery UTS and UNSW Innovations introduce some of our country's smartest minds to the opportunities the tech industry provides for radically redefining the globally economy from Sydney.

There's still much work to be done but the signs are increasingly positive and it's incredibly clear that the NSW tech ecosystem is in better shape than it has ever been.

// The startup ecosystem in South Australia

Contributed by

Paul Daly,
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With the impending closure of Holden and a decline in traditional manufacturing, South Australia is looking to innovation as the main ingredient in transforming the economy. It is clear that startups have a very important role to play in bringing innovation to life ... and to market.

Adelaide has a remarkably vibrant entrepreneurial ecosystem. There are now 130 programs that exist to support entrepreneurs starting new ventures and at least 50 of these are specifically relevant to tech startups. The recent addition of SouthStart Accelerate, a mentor driven startup accelerator in Adelaide, has further strengthened the local startup ecosystem.

The people running these programs are working together to build capability and capacity in the startup sector. Adelaide now has 7 tech focused co-working spaces that are collaborating to help grow demand for co-working. However, the risk of 'burn out' for those committing their own time most heavily to supporting the startup sector continues to be an issue. The ecosystem still depends very heavily on volunteer effort and the existing financial support from government is necessary to provide the framework that leverages the good will of volunteers.

In its second year, Entrepreneurs Week (6-10 June 2016) featured 46 events and attracted over 4,000 registrations. SouthStart was a jewel in the crown for the program with an outstanding speaker program and over 400 registrations from local startups and their supporters. The Competitiveness Institute also held its 3rd Oceania Cluster Conference in Adelaide as part of Entrepreneurs Week.

The ability to bring together such a strong program for Entrepreneurs Week was made possible by three years of ecosystem development led by the entrepreneurial community itself. It started with the 'Towards a City of Entrepreneurs' forum in June 2013.

A follow up forum held in August 2016 reviewed progress and focused attention on the priorities that still needed to be addressed by the community. A keynote address from Brad Feld, US entrepreneur, investor and author of the influential book Startup Communities, highlighted the importance of these communities being driven by entrepreneurs, having a long term vision and having prolonged commitment from stakeholders.

As a result of the Forum, working groups were established to look at the main issues, including:

- the long term vision for the startup community with SA's bicentenary in 2036 being a key date for an ambitious agenda;
- the need to promote STEM subjects and entrepreneurship in schools so that students are engaged early and aware of technology and entrepreneurship as valid career options.

However, the biggest issue still facing the startup community in South Australia continues to be the inadequate supply of early stage capital.

To help address this issue, the SA Government announced in its 2016 budget a $50 million commitment to establish a new South Australian Venture Capital Fund in order to support new businesses, attract additional venture capital, and encourage companies to re-locate to South Australia. It also announced a $10 million Early Stage Commercialisation Fund to assist startups at the pre-seed and seed stage of development so that they are better positioned to attract long-term investment.

Recognising the importance of broadband to an innovation economy, the State Government and the Adelaide City Council are working together to make Adelaide a 'Gig city' with 1-10 gigabit internet available to businesses in the CBD and at selected hubs across the city.

Serious consideration needs to be given to recent recommendations proposing that a tech startup precinct be established in the CBD in order to bring a concentration of innovation activity and support into close proximity to harness the associated energy and maximize opportunities for collaboration.

Local and State government, the universities, investors and passionate entrepreneurs are all working together to build the tech startup community in Adelaide. In light of the economic transformation that we are facing, a strong focus on supporting innovation in South Australia is no longer an option – it is an absolute imperative.

// The startup ecosystem in Victoria

Contributed by

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The size of the community is growing at a rapid pace, in 2016 the Startup Victoria community doubled in size for the third year in a row. The monthly pitch events attract 500+ founders, while the flagship conference above all human doubled in size with 1000+ attendees.

In the past year alone we have seen global tech leaders like Slack, Square, Stripe, Zendesk, DataCom, Digital Realty, Pocketmath and GoPro all set up regional headquarters in Melbourne. They join locally-grown success stories such as Lifx, Nitro PDF, Aconex, 99Designs, VinoMofo, Envato, Catapult Australia, Red Bubble, and Culture Amp to name a few.

The fintech scene in Victoria has grown tremendously in the past year, with notable startup successes including PromisePay, Moula and Timelio. Whilst generating startup and corporate interest, a robust community has formed for founders providing support to one another.

Over the last 12 months there has also been a noticeable increase in funding opportunities for startups with several funds such as Signal Ventures, Mai Capital, Giant Leap Fund and Rampersand's 2nd fund being made available to early stage startups. Even though significant progress has been made in terms of the available capital there is still a lot of work to be done. When compared to other ecosystems in the region Melbourne still seems to be lagging behind in terms of available capital.

The State Government officially launched "LaunchVic", a $60 million fund to help support and grow the startup ecosystem in the state. LaunchVic will invest in core infrastructure, improve access to capital for local startups, advocate on Commonwealth legislation and regulation, as well as engage in startup events, campaigns, competitions and mentoring programs.

Recently LaunchVic released their first round funding guidelines, receiving close to 400 submissions from the ecosystem. After funding 12 initiatives ranging from accelerator programs to regional initiatives to a digital platform unifying the community, the second round of funding has opened up in September. This initiative is poised to make a big impact on Melbourne's ecosystem by collaborating with the local community.

Through initiatives like Office Hours, where early stage founders can book meetings with experienced founders and investors, and Unpitch, where founders and investors get connected in a non-traditional format, Startup Victoria has been tremendously effective in establishing connections within the ecosystem.

Establishing these connections is still a work in progress but it has gotten to a stage where the focus is shifting to establishing connections with other leading ecosystems. For this process support from the Federal Government and local founders who have successfully scaled their respective companies beyond Australia is critical. Austrade's landing pads are a good start but more help is required.

Victoria, as the education state, is producing the most talent of all the cities in Australia. The challenge is how to make this talent flow from the universities into the local startup space as opposed to corporate Australia and adjacent startup ecosystems. The local universities are making great strides in developing initiatives that make this a reality.

From the University of Melbourne's well established MAP program to new initiatives like Victoria University's stimulator The Hanger, RMIT's Activator, Swinburne's Factory of the Future, Monash's Generator and Deakin's Spark program, the local universities seem to have accepted the fact that startups are the fulcrum that will transition Australia into a sustainable economic future.

// The startup ecosystem in Western Australia

Contributed by

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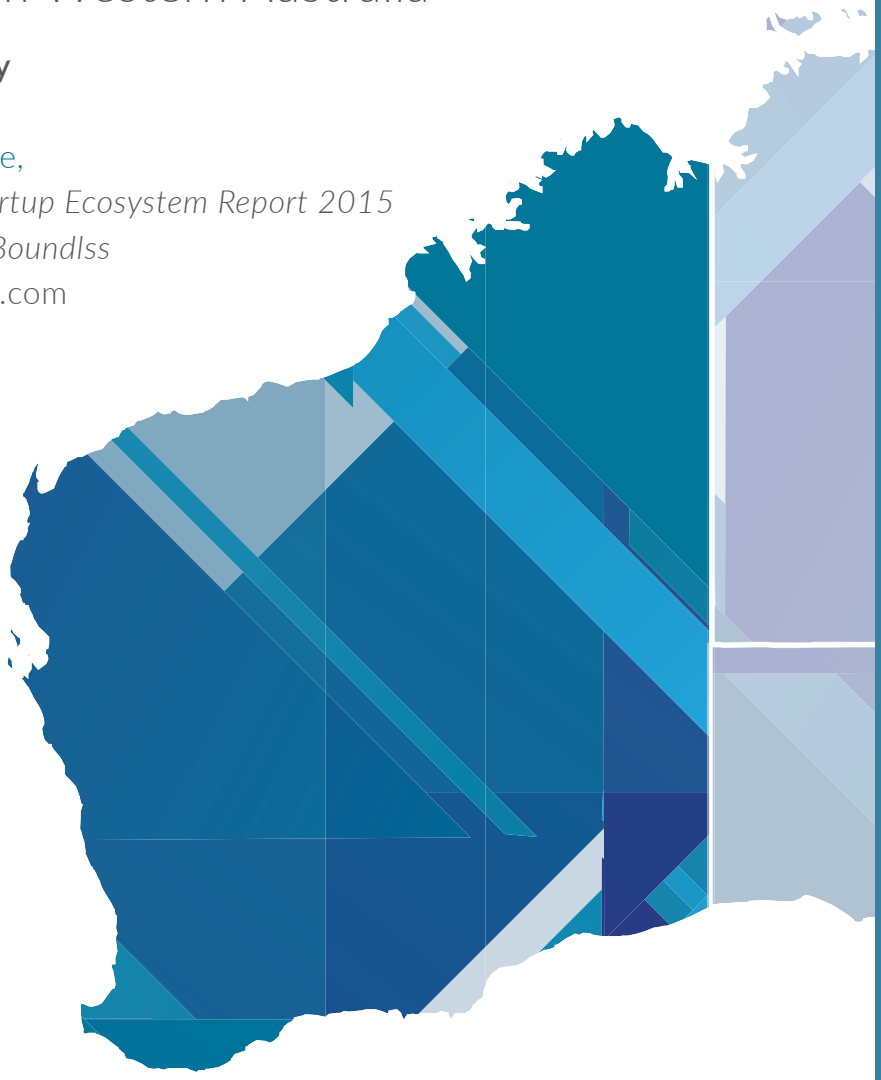


The recent WA Startup Ecosystem Report 2015 identified over 560 startup digital and internet technology startups operating throughout WA, formed after January 2010. The report found approximately 3,000 people who are working in and building early stage scalable technology startups.

The report also identified over $101 million in total funding over the past 6 year period to 77 startups, ten of which raised funding by listing on the Australian Stock Exchange (ASX). There are 23 established tech companies and 10 startups from WA listed on the Australian Stock Exchange.

While opinion is mixed on the value of startups listing at such early stages, we found that the quality of listed startups was mixed, with both exceptionally good and weak companies raising money through the ASX. While listing at such early stages isn't normal in the US technology industry due to the financially and regulatory costs of the ASX and the dearth of private investment in startups the ASX provides a viable vehicle within Australia and WA.

Across WA there are a substantive number of meetups, hackathons and community driven educational activity in the ecosystem.

Co-working spaces have arisen in the past 6 years in the Perth CBD, Leederville, Joondalup, Fremantle, Geraldton in the Mid-West, and as far south as Pollinators in Bunbury. These places serve as a vibrant catalyst for innovation and entrepreneurship and are increasingly moving up the innovation value chain from offering sharing office space to formal startup accelerators providing seed capital for early stage commercialisation. Spacecubed in Perth's CBD now hosts 5 accelerators and seed accelerators, along with multiple hackathons throughout the year.

WA Universities have a history of commercialising innovation, out-performing east coast universities when viewed through the lens of company formation and university spinouts. There is also an increasing number of student led programs, hackathons and incubators arising out of universities, such as UWA's Bloom Labs. However compared to US and UK university company formation rates there is still much Western Australia can do to develop more innovative startups.

WA needs a few key things:

1. State Innovation Strategy: In consultation with diverse stakeholder groups, develop a state innovation strategy.
   Setting out a clear strategy and making it publicly available helps the government and innovation ecosystem to come together around a unified vision.
2. Startup Awareness Campaign: Implement a campaign to raise awareness of the state's startup ecosystem, encourage participation in the sector and increase understanding of the role digital technology will increasingly play in our society.
3. Develop ways to increase critical mass such as an Emerging Entrepreneur Visa: Explore ways to increase the number of foreign entrepreneurs that can, and do, obtain Entrepreneur Visas.
4. Increase the number of people with entrepreneurship and STEM skills, and increase the participation of universities in the development of entrepreneurs and startups.
5. Develop a robust, dense and connected ecosystem in which participants have easy access to critical local, national and international networks. Key project is a Perth CBD Innovation Precinct: Establish a CBD innovation precinct for startups, accelerators, co-working spaces, corporate R&D labs, venture firms and other key participants in the ecosystem. A central precinct would provide a critical mass of office, educational and networking space for startups and supportive organisations. Additionally, it would send a strong signal to the wider community that the City of Perth and the WA Government are committed to developing a significant technology industry.

6. Proactively create situations that foster step changes in innovation, such as regulatory environments that support innovative services – such as Autonomous Vehicle Regulations: Develop a roadmap for regulatory changes that allow autonomous vehicles (AV) to conduct tests and operate on WA roads.
7. Perth is the most isolated city in the world, however it shares the same time zone and is geographically close to Asia. WA needs to develop technology entrepreneurs access to markets. Where possible increase the number of 'customers' using technology. Conduct bilateral trade missions and roadshows for startups and investors, with innovation hubs such as Singapore, Hong Kong, Silicon Valley, New York, London and Shanghai.
8. While there are many high net worth individuals in Perth due to the resource sector, few have an understanding of technology. We need community investment education programs to encourage education and networking events for investors, brokers, financial planners and other financial service professionals on the startup sector.
9. We only have 1 or 2 active VC funds in WA. Their fund pool is small and they are not highly active. WA is in desperate need of post-accelerator/ Seed VC funds and growth funds.

// The startup ecosystem in the ACT

Contributed by

Sarah Pearson,
CEO, CBR Innovation Network
www.cbrin.com.au

Canberra's innovation ecosystem is seeing unprecedented acceleration. In the last 12 months Canberra has seen the development, growth and connectivity of maker's spaces, co-working spaces, accelerators and incubators. Once considered the home of government, Canberra is experiencing a huge shift towards private industry. Canberra is well placed to be a major player in the innovation and entrepreneurship space in Australia, with the city's high concentration of universities, research and education institutes, government infrastructure, embassies, and a growing, wealthy and well educated population.

The partnership between the ACT innovation community, ACT Government, and the newly formed CBR Innovation Network (CBRIN) has been a key part of this acceleration. CBRIN is an ACT Government initiative, with six Foundation Members: Australian National University, University of Canberra, University of NSW Canberra, Commonwealth Scientific and Industrial Research Organisation, Canberra Institute of Technology, and National ICT Australia/Data61. CBRIN also connects with the whole innovation ecosystem in Canberra. This year we have attracted two Gold Sponsors, King & Wood Mallesons and PricewaterhouseCoopers. Over 5,000 people are part of our connected innovation community in Canberra.

Some of the highlights for 2015/16 include:

- 11,000+ people have visited CBRIN this year
- Monthly networking event attracting 200+ from across the ecosystem each month (entrepreneurs, innovators, companies, government, angel and VC investors, researchers and service providers)
- The establishment of the KILN Incubator, the first broad business incubator in Canberra
- The growth of startup Instacluster from 4 ACT based employees to >25 globally
- The sale of Canberra based company eWay for >$50m USD
- $4.5m in grants from the Co-Operative Research Centres (CRC-P) Programme for two Canberra based companies – Seeing Machines and Mineral Carbonation International (MCi)
- The ACT provided Innovation Connect Grants up to $30,000 for Startups
- Screen ACT started its accelerator for film startups
- The launch of a new $10M - $30M fund, Significant Capital Ventures
- The ACT Government allocated $1.45m to a CBR Innovation Development Fund to stimulate innovation and collaboration in the ACT
- The first Canberra Indigenous Business Tradeshow, an opportunity to showcase Canberra's diverse collection of Indigenous businesses and encourage others to get into the startup scene
- GRIFFIN Accelerator third round launched with 80% female founders
- Inspiring Australia Program launched to promote STEM and entrepreneurship to students and society
- Establishment of the National Startup Ecosystem Practitioners Group – to look at ways to connect innovation ecosystems across Australia

ACT Government support has been crucial. CBRIN would not exist were it not for the financial support and close relationship with ACT Government. Our partnership enables us to engage in broader discussions and collaborations on Territory innovation strategy, as well as the occasional sharing of employees. Coupled with this, giving CBRIN the freedom to get on and DO, being an independent company, has been one of the secrets to success. While all this news is good, there remain challenges that hold back the development of the startup ecosystem in CBR. Some of these include:

- Direct International flights are crucial to getting overseas investors and entrepreneurs interested (being addressed in September with direct flight connections to Singapore and Wellington)
- The availability of affordable housing
- Attracting large corporations to collaborate and engage with the ecosystem (this requires strong and strategic support from government)
- Changing the culture in Canberra to be more entrepreneurial through the attraction of great events

We feel like we are just getting started, and have been overwhelmed by the local, national and international support.

// The startup ecosystem in Tasmania

Contributed by

James Riggal,
President, Startup Tasmania
www.startuptasmania.com

If you've read the last two Crossroads Reports, you'd be entitled to think that not much (if anything) was going on in the startup scene in Tasmania. However, visit Tasmania and you'll soon discover that there are some extremely exciting startups who have chosen to escape the rat race of a major capital city and to build their company in a place where founders and developers benefit from a lower cost of living and higher quality of life. Startup leaders within Tasmania look at the similarities to Boulder and dare to dream. Brad Feld believes higher concentrations within smaller communities produces better results – so startup leaders within Tasmania are developing the local ecosystem based on his 'Boulder Thesis'.

With the State Government, University of Tasmania and other educational partners supporting the local ecosystem as feeders and Tasmanian entrepreneurs taking the lead, Tasmania will open two Innovation Hubs in Hobart and Launceston in August. This project aims to create dual, connected focal points where founders, developers, students and industry can interact. This program has been supported by the Tasmanian Government, with seed funding being provided through the Coordinator General's office. However, State government, the University of Tasmania and other project partners are all working together to establish a new not for profit company which will run the innovation hubs and continue building momentum in the Tasmanian startup community. This approach will ensure that while larger partners are involved in supporting the growing ecosystem, the project will continue to be led by Tasmanian entrepreneurs.

Tasmanian startups are already developing world class products and attracting investment. Highlights over the last 12 months include TasmaNet which closed a $5.3 million round, Biteable which raised $1.1 million and The Yield which attracted a $2.5 million investment from Bosch Group. Tasmania is also developing world class capacity in hardware design and manufacturing, which is enabling the state to position itself as a leader in internet of things research and development. There is world class research taking place at the University of Tasmania through the Sense-T project, which is already helping to facilitate the creation of new startup companies in the state. Alongside this, Launceston startup Definium Technologies has developed an advanced sensor manufacturing facility that can take a hardware or internet of things product from idea, to prototype, to commercial product, without having to outsource any substantial part of the product development process. While it might not immediately seem like Tasmania is a great place to start a high tech company, Biteable, Tasmanet, The Yield and Definium Technologies are proving that being outside of a major capital city doesn't prevent you from building a successful high tech startup.

While Tasmania is small, in terms of startups per capita, the state is punching well above its weight. A recent survey has indicated that Hobart currently has 17 startups giving it 78 tech startups per million people and Launceston 19 giving it a massive 256 tech startups per million people; a higher concentration than most other Australian Cities. So, while Tasmania may be small, its startup ecosystem is vibrant, densely interconnected, well-supported and growing rapidly, which all suggests that it's going to be a regional startup ecosystem to watch over the next few years.

FEDERAL GOVERNMENT POLICIES AND PROGRAMS

// Current government policies and programs

The last year has seen a large number of important developments for startups at the Federal Government level. Startups were a major focus of the Federal Government's National Innovation and Science Agenda (NISA), with a range of new policies and programs announced in December 2015.

The key initiatives relevant to startups were:

- Funding support for the establishment or expansion of startup incubators and accelerators
- The introduction of a new Entrepreneur Visa to enable founders of promising overseas startups to relocate to Australia
- Tax incentives for individual investors to encourage more angel investment in startups
- The establishment of startup landing pads in five overseas locations
- Changes to the tax treatment of Venture Capital Limited Partnerships to encourage the formation of more VC funds that will invest in startups
- Regulatory changes to enable crowd-sourced equity funding
- Improved insolvency laws to encourage entrepreneurial behaviour

// Funding allocation to NISA

The Federal Government announced a commitment of $1.1 billion over four years to deliver the 24 initiatives in the National Innovation and Science Agenda. This represents a positive first step toward the economic transition that Australia urgently needs, and it is the first time in the country's history that any material commitment has been made to delivery of startup-focused programs by the Federal Government. Many of the NISA measures received strong bipartisan support, which – in the case of some of the measures – was a significant reason the policies were able to be put into effect quickly. Bipartisan support for a supportive startup agenda was evidenced by Labor's suite of startup-focused policies which was developed progressively through 2015 and announced in three distinct tranches.

At the time the NISA was announced the government flagged that it represented the beginning of a process to build a comprehensive series of measures in innovation and startup policy. It was a 'platform' from which growth would then spring. Encouragingly, both sides of politics have continued to advocate for more action in this space.

The NISA should indeed be seen as a good start, but not the end of the process. The quantum of funds committed remains substantially below the level that other competitive startup ecosystems are committing, and more thought and investment will be required to achieve the desired system-wide outcomes. Expectations of the impact of NISA need to be tempered by recognition that it was preceded by sizeable funding cuts to research and innovation funding, and the fact that the headline $1.1 billion includes $400 million for continuing initiatives such as the Australian Synchrotron, the National Collaborative Research Infrastructure Strategy (NCRIS) and university block grants.[15]

Worldwide, startups have been shown to be a massive contributor to economic growth and high value job creation over several decades. Yet the Australian Government's investment in supporting the startup ecosystem remains modest. As Professor Mark Dodgson from The University of Queensland notes, *"$1 billion is what Samsung spends on R&D every three weeks"*.[16] For further context, support for the startup sector can usefully be compared with the government's 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),[17,18] the mining industry (subsidies of $4.5 billion per year including $2 billion per year in fuel tax credits to mining companies),[20] and assistance packages in the hundreds of millions of dollars a year to other sectors and individual businesses.

[15] The Monthly, March 2016, page 11
[16] theconversation.com
[17] smh.com.au
[18] abc.net.au
[19] abc.net.au
[20] theguardian.com

// Focus on research-based opportunities

A clear focus of NISA has been on increasing broader collaboration between university researchers and industry. This is an important area, as Australia historically performs poorly in collaboration between research and industry. Australia is ranked last amongst the OECD countries on this measure.[21]

As a result, several NISA initiatives were aimed squarely at incentivising universities to improve their collaboration with industry, including:

- Introducing a national impact and engagement assessment that will assess the economic, social and environmental benefits from university research; and
- Introducing new research funding arrangements for universities which give equal emphasis to success in industry and other end-user engagement as it does research quality.

StartupAUS welcomes the government's efforts to encourage greater industry-university collaboration. However, we also caution against succumbing to the view that science and scientific research are a necessary precursor to all innovation. NISA has a clear emphasis on the research sector, and in terms of dollars committed is much more heavily weighted towards science rather than entrepreneurship.

We encourage policymakers to decouple the concepts of "research", "innovation" and "entrepreneurship" in developing policy and ensure that funding remains balanced across the three areas. Many of today's most successful companies are based on business model innovation rather than any particular scientific or technological breakthroughs. They are often using available technologies (such as the internet) rather than developing new technology as the core basis for their competitive advantage. By way of example, Amazon, Facebook, Microsoft and Uber have a combined market capitalisation of A$1.6 trillion, which is more than the combined value of all companies on the ASX, but none had their origins in research. In R&D policy terms, it is important to recognise that the majority of commercial outcomes are driven by firms developing new products, whether or not those products are based on scientific research.

In Australia a large proportion of tech startups have internet-based business models and are not based on research. Focusing narrowly on research-based opportunities could have the undesirable effect of under-supporting digital startups and could jeopardise their potential to grow rapidly and become global tech companies on the same scale as Amazon, Facebook, Microsoft and Uber.

"Amazon, Facebook, Microsoft and Uber have a combined market capitalisation of A$1.6 trillion, which is more than the combined value of all companies on the ASX, but none had their origins in research."

[21] Office of the Chief Economist, Department of Industry, Innovation and Science, Australian Innovation System Report 2015

// Innovation and Science Australia

Innovation and Science Australia was announced as part of NISA, and will be a new independent statutory board with responsibility for providing strategic whole-of-government advice to the government on all science, research and innovation matters. The Board will provide advice to government, through the Minister for Industry, Innovation and Science, to the recently established Science and Innovation Committee of Cabinet.

The board of Innovation and Science Australia has advised that it will undertake an audit of the innovation and science system, and develop, with the assistance of external advisors, a long term plan based on the findings of the audit. Dr Charlie Day was announced as the CEO of the Office of Innovation and Science Australia on 9 November 2016.[22]

// Status:

Operational

// StartupAUS perspective:

The ISA board is high-quality, made up of leaders from across the sector with extensive industry experience. It will provide a valuable source of advice to the government. Nevertheless, it has no operational role and does not oversee or administer programs.

Innovation and Science Australia is commissioning an audit and seeking to produce a report on Australia's innovation system. Over the years, the government has produced or commissioned several substantial reviews of aspects of the innovation ecosystem – including the Innovation System Report (2011, 2012 and 2013)[23] produced by the Department of Industry; the Review of Venture Capital and Entrepreneurial Skills (2012) prepared by The Treasury and the Department of Industry, Innovation, Science, Research and Tertiary Education;[24] and an Independent Econometric Analysis of the Innovation Investment Fund (2010).[25]

These reports accurately identify many of the fundamental issues facing the innovation system. In some cases they are explored in great detail. StartupAUS recognises the need to ensure decision making is driven by the best available data, but would encourage a greater focus on proactive policy development and delivery flowing from the findings of any future reports.

[22] industry.gov.au
[23] innovation.gov.au
[24] avcal.com.au
[25] innovation.gov.au

// R&D Tax Incentive

Australia's R&D Tax Incentive is one of the largest indirect support programs globally for R&D. It operates at an estimated cost of around A$3 billion per annum, or 0.71% of government budget expenditure (FY2015).[26]

For Australian startups, the R&D Tax Incentive is of critical importance as a source of funding to enable job creation and company growth. For the government, the costs of the incentive are offset by revenue increases via income tax on jobs created as well as other flow on economic impacts. The R&D Tax Incentive is claimed through a company's income tax return, which means that the benefit lags behind the costs incurred by the company in undertaking R&D. For rapidly growing startups this lag can impact severely on the continuity and progression of R&D activities and is a major cashflow consideration.

// Status:

Operational and ongoing

// StartupAUS perspective:

The R&D Tax Incentive is a valuable source of funding for startups, and based on feedback from the startup community StartupAUS understands it is accessed and relied upon by a very large proportion of Australian startups.

However the program could be made more valuable by increasing the quantum of funding to startups and increasing the frequency with which startups can access it. Further commentary on expanding the R&D Tax Incentive is provided in Recommendation 3. StartupAUS has also made a detailed submission to the current ongoing R&D Tax Incentive review, which can be found at https:startupaus.org/resources/rd-tax-incentives-submissions/.

"For Australian startups the R&D Tax Incentive is of critical importance as a source of funding to enable job creation and company growth."

[26] Innovation Australia Annual Report 2014-2015" (2015), Innovation Australia, Department of Industry Innovation and Science, Australian Government

// Entrepreneurs Program (EP)

The Entrepreneurs Program (previously the "Entrepreneurs Infrastructure Program") is a grant funding program that provides support to startups through its "Accelerating Commercialisation" stream via matching funding for eligible expenditure.

// Status:

The Entrepreneurs Program is currently operational.

// StartupAUS perspective:

The Accelerating Commercialisation stream of the EP has a budget of A$42 million per annum. It is a scaled-back version of the Commercialisation Australia program which had previously awarded A$200 million to over 500 companies over three to four years.[27]

The experience of Australian startups has been that, although the grant funding from the EP is valuable, the grants are highly competitive, require detailed supporting documentation, and funding decisions can take many months. Many early stage startups cannot afford to commit the time and resources to applying for funding that is highly uncertain, and as a result many startups do not consider applying.

The government launched the Accelerating Commercialisation stream of the EP after winding up the Commercialisation Australia program as part of the 2014 Federal Budget. The Accelerating Commercialisation stream of EP received approximately half the total funding previously allocated to Commercialisation Australia. StartupAUS made a submission to the government at the time, noting that a reduction in grant funding to startups would lead to a further reduction in the availability of early stage capital, and that this would accelerate the existing trend toward startups leaving Australia in search of more favourable funding environments. Notwithstanding recent improvements in the availability of early stage capital, StartupAUS remains of the view that government funding for important programs such as the Entrepreneurs Program should be increasing in response to increased numbers of startups seeking funding.

[27] Commercialisation Australia Program Direction No. 1 of 2011: www.legislation.gov.au

// Tax incentives for angel investors

The National Innovation and Science Agenda introduced tax incentives to encourage individuals to invest in startups. The incentives provide investors with a 20% non-refundable tax offset based on the amount of their investment, capped at $200,000 per investor per year, as well as a 10-year capital gains tax exemption for qualifying investments held for at least 12 months.

The tax incentives are also available for "non-sophisticated investors", with the incentive capped at investments of $50,000 per income year.

The tax incentives are available for investments in companies that are deemed to be qualifying Early Stage Innovation Companies (or ESICs), as summarised on the following page.

// Status:

Operational. The tax incentives came into effect from 1 July 2016.

// StartupAUS perspective:

Tax incentives to stimulate angel investment were recommended by StartupAUS in the 2014 and 2015 Crossroads reports, and reiterated in direct submissions to government prior to release of the National Innovation and Science Agenda. This important initiative is now underway, and received bipartisan support to be voted into law ahead of the 2016 election.

The incentives are based on the successful Seed Enterprise Investment Scheme in the UK, which resulted in over A$500 million in funding to almost 2,900 companies in its first two years.[28] Furthermore, a survey by Deloitte in 2013 found that 58 per cent of British angel investors would have invested less or not at all if the SEIS were not available.

Early anecdotal experience in Australia suggests these measures have driven a substantial increase in angel investment. This, in the context of the results from the UK, suggest the measures are likely to have a strong positive effect. When combined with the substantial increase in venture capital funds raised in Australia in 2015-16, this measure may go a long way towards fixing the funding availability for startups in Australia in the short to medium term.

[28] innovation.gov.au

// New tax incentives for early stage investors explained

The following summary was prepared for StartupAUS by Shaun Cartoon (Managing Associate, Allens) and Anfeng He (Senior Associate, Allens). A longer version is available on the resources section of the StartupAUS web site.

From 1 July 2016, individuals who invest in a qualifying early stage innovation company (ESIC) may be eligible for tax incentives. The recently enacted legislation is designed to encourage greater investment in ESICs to help them both get off the ground and to survive the 'valley of death' in the lead up to a Series A capital round. The new tax incentives encourage angel investment by offering investors a 20% tax offset of up to $200,000 and a capital gains tax (CGT) exemption on the disposal of their interests in the ESIC. The complexity of the new legislation means that ESICs, and their investors, should obtain legal and tax advice before proceeding to apply the new rules. The consequences for investors of getting it wrong are substantial.

1. What qualifies a startup as an ESIC?

For an investor to be entitled to the tax incentives, the company must qualify as an ESIC immediately after the shares are issued to the investor. If the company subsequently fails to meet the ESIC requirements after the shares are issued to the investor, this should not affect the investor's entitlement to the tax incentives.

A company will qualify as an ESIC if it meets both an "early stage" test (a checklist to verify that the company is genuinely at an early stage of development); and an "innovation" test (that uses either a principles-based or points-based approach to verify that the company is an innovation-based business). A company can apply for a ruling from the Australian Taxation Office (ATO) about whether it satisfies the innovation test.

Allens › ‹ Linklaters

// New tax incentives for early stage investors explained (cont)

2. How does the 20% tax offset for investors work?

Eligible investors that acquire newly issued shares in an ESIC on or after 1 July 2016 will receive a non-refundable carry forward tax offset of 20% of the amount paid for their investment, subject to a maximum offset cap amount of $200,000 for the investor (and their affiliates combined) for each income year. The tax offset will reduce the investor's tax payable (dollar-for-dollar), but it cannot be used to obtain a tax refund. The unused portion of the tax offset can be carried forward to future income years.

3. How does the CGT exemption for investors work?

Eligible investors that acquire newly issued shares in an ESIC on or after 1 July 2016 can disregard capital gains realised in respect of shares in ESICs that have been held for between one and 10 years. Capital losses must also generally be disregarded.

The maximum tax offset cap of $200,000 does not limit the number of shares that potentially qualify for the CGT exemption.

Investors that don't meet the 'sophisticated investor' test under the Corporations Act 2001 (eg. most 'mum and dad' investors) are not eligible for any tax incentives if their total investment in qualifying ESICs in an income year is more than $50,000. The purpose of this restriction is purportedly to help protect inexperienced investors from being lured into risky investments. Care must therefore be taken by ESICs not to make any representations about the tax incentives that might be available to potential investors.

Allens › ‹ Linklaters

// Changes to ESVCLPs to encourage more investment in startups

The government has committed to making changes to the tax treatment of Early Stage Venture Capital Limited Partnerships (ESVCLPs) to attract more investment into high potential startups. The new measures provide for:

- Partners in new ESVCLPs to receive a 10% non-refundable tax offset on capital invested during the year
- Increased maximum fund size from $100 million to $200 million for new ESVCLPs
- ESVCLPs to no longer be required to divest a company when its value exceeds $250 million

// Status:

Legislation was passed on 4 May 2016.

// StartupAUS perspective:

Changes to both the VCLP and ESVCLP will relax eligibility and investment requirements to allow managers to undertake a broader range of investment activities and greater diversity of investors.

// Crowd-sourced equity funding

A growing list of countries have enabled crowd-sourced equity funding (CSEF), and the Australian Government has been considering implementing legislation to enable CSEF since a review and recommendation by the Corporations and Markets Advisory Committee (CAMAC) in June 2014.

Crowd-sourced equity funding legislation was introduced in Parliament in December 2015. It requires that companies seeking to raise funds using CSEF be a public company and have turnover and gross assets less than $5 million. For individual CSEF investors it places an upper limit of $10,000 per company per year.

// Status:

Legislation on CSEF has stalled. The Senate Committee undertook a review of the framework and recommended in March 2016 that the House of Representatives resume the bill. However the bill has since lapsed.

// StartupAUS perspective:

It is more than two years since CAMAC recommended action be taken to introduce CSEF frameworks. StartupAUS believes that CSEF holds some promise as a funding mechanism for certain startups, although in light of the improvements in availability of early stage capital in Australia (including as a result of the recently introduced tax incentives for early stage investors), the importance of enabling CSEF in Australia has diminished considerably. Globally there has been a mixed response to efforts to implement CSEF – mainly due to the difficulties in balancing ease of raising capital with the need to have adequate protections for investors.

StartupAUS believes CSEF will only ever be a funding option for certain types of startups, and it will for the most part be a source of "dumb" money. It is not a panacea for the funding of Australian startups in general. Given the immaturity of the Australian startup ecosystem and the large number of inexperienced startup founders, it remains critical that Australia continue to develop its sources of "smart" money (ie. from investors who can provide knowledge capital as well as financial capital) – including angel investors, family offices and venture capital funds.

StartupAUS encourages the Federal Government to continue to explore options to implement CSEF in Australia. If and when CSEF is implemented it will be highly desirable to revisit the current draft legislation which excludes propriety companies (and thus almost all startups) from the regime. Proposed measures to allow proprietary companies to provide limited public disclosure to qualify for the scheme would be a substantial deterrent for many startups, both because such disclosure is administratively burdensome and because it presents substantial commercial risks.

// Entrepreneur Visa

The National Innovation and Science Agenda allocated $1 million to improve the visa system and develop a new Entrepreneur Visa for entrepreneurs with "innovative ideas and financial backing".

The new Entrepreneur visa has now been established as a new stream within the existing Business Innovation and Investment (Provisional) visa (subclass 188) and the Business Innovation and Investment (Permanent) visa (subclass 188). It would provide a pathway to permanent residency for individuals who have raised funding from investors to develop their startup in Australia.

The Entrepreneur Visa requires applicants to have raised at least $200,000 from an approved Australian investor. They must also be endorsed by a State or Territory government.

// Status:

The new Entrepreneur Visa was announced in September 2016 and is now in effect.

// StartupAUS perspective:

An Entrepreneur Visa has the potential to fill a critical skill gap in the Australian startup ecosystem by attracting experienced entrepreneurs from other countries and at the same time helping to promote Australia as a destination of choice for founders and entrepreneurs. We therefore commend the government for pursuing such a visa. Unfortunately, as it currently stands, it is unlikely that this visa will attract many, if any, quality applicants.

Under the legislation, applicants must have raised $200,000 from an 'approved investor'. Approved investors are limited to Commonwealth Government agencies, State or Territory governments, publicly funded research organisations, investors registered as an Australian VCLP or ESVCLP, or 'specified higher education providers'. Committed funds from angel investors are not included. Essentially, for the majority of applicants, this will require raising $200,000 from established Australian VCs before they are eligible to apply for the visa. This may present a very significant barrier, as many Australian VC funds do not invest in seed stage enterprises.

// Entrepreneur Visa (cont)

On top of the investment criteria, entrepreneurs applying for Australia's new visa will need to be approved by a State or Territory government in order to be eligible. Once these and other technical requirements have been met, the Department of Immigration and Border Protection advises that the standard processing time for the visa is nine months. The cost of making the application (whether successful or otherwise) starts at $3,600 for a single applicant.

Given the significant difficulty involved in obtaining funding from an approved source before being issued with a visa, the large administrative burden of meeting both Federal and State qualifying criteria, and the prospect that the process could take in excess of a year from deciding to apply, it is unlikely that the visa will attract many applicants.

Other comparable countries have been offering Entrepreneur Visas which are much more attractive for some time. In Spain, for example, applicants can expect a visa within 10 days, with an application fee of $88. Many Entrepreneur Visas include a requirement for applicants to show investible capital, but very few require the funds to have been raised locally, or from specific types of entities.

To read StartupAUS's October 2015 proposal on developing an Entrepreneur Visa, visit *www.startupaus.org/wp-content/uploads/2015/11/Entrepreneur-Visa.pdf*

// Digital Technologies Curriculum

The National Innovation and Science Agenda included a number of initiatives to boost digital literacy as part of a $51 million five year package including:

- Support for teachers to implement the Digital Technologies Curriculum through online learning activities and expert help, likely to come out of an expansion of the University of Adelaide's well regarded Massive Open Online Course (MOOC).
- Specialist ICT teachers to be deployed to schools for up to a term to provide intensive in-class support.
- Grants to enhance implementation of the Australian Curriculum-Digital Technologies. Principals and ICT leaders will be able to apply for modest grants to facilitate implementation of the new Digital Technologies Curriculum. Up to 100 grants will be funded each year over two consecutive years. Grants will be awarded on a competitive basis with priority given to those projects that demonstrate genuine innovation, sustainability and positive educational outcomes.

// Status:

Implementation of the Digital Technologies curriculum has commenced in all states.

// StartupAUS perspective:

StartupAUS applauds the progress made in the early stages of implementation of the Digital Technologies Curriculum.

Currently computer science is only mandatory from year one to year eight and is an elective for years nine and 10. StartupAUS advocates extending the Digital Technologies Curriculum to make computer science and computational thinking a mandatory component of the school curriculum starting in year one and running to year ten, and an elective subject in years 11 and 12. This would make the curriculum consistent with trends in computer science education in countries such as the USA, the UK, New Zealand, the Netherlands and Vietnam, where it is a required subject in schools from kindergarten to year 10 or beyond.

Further commentary on extending the Digital Technologies Curriculum is provided in Recommendation 8.

// Incubator Support Program

The government has allocated $23 million in grant funding to support existing incubators and encourage new ones. Matching grants of up to $500,000 will be provided via the existing Entrepreneurs Program and will focus on "regions and sectors of high innovation potential".

The program's objectives are to increase the number of incubators and accelerators and support existing programs. It will provide funding of up to $500,000 per applicant for activities such as attracting overseas experts, and will have a focus on regions and sectors of high innovation potential.

// Status:

The Incubator Support Program became operational in September 2016.

// StartupAUS perspective:

Unlike many countries, Australia has no centrally supported system of startup incubators. There are a growing number of tech startup incubators, accelerators and startup co-working spaces in Australia, although the operating models for these programs are varied. Most are initiatives of State governments or local councils, and rely on financial support from a combination of State government, corporates, universities, local governments, philanthropy, and membership fees. Accelerators, being a relatively new addition to the landscape, are generally privately funded by investors and entrepreneurs, and take an equity stake in each of the companies they support in return for expertise and a small cash investment.

The economic impact of startup incubators and accelerators is clear: In the US for every dollar of public investment in incubators an additional 30 dollars in tax revenue is generated, and 87% of incubator graduates stay in business. For every $10,000 governments have invested in incubator programs in the US an additional 58 local jobs are generated, which is 20 times the job creation rate of infrastructure projects.[29]

According to Startup Muster, 49% of all tech startups in Australia rely on co-working spaces for support and guidance, and 25% of startups have taken part in an incubator or accelerator.[30] These entities are vital to the continued growth of startups in Australia as they provide much-needed expert guidance, mentoring, access to investors and an environment in which startup founders can learn from each other.

[29] nbia.org
[30] startupmuster.com

// Incubator Support Program (cont)

The two largest challenges faced by incubators, accelerators and startup co-working spaces are a lack of affordable space to expand in response to demand, and a lack of experienced mentors who can guide first-time startup founders.

The $23 million committed by the Federal Government under the Incubator Support Program is a material funding commitment, and StartupAUS is optimistic that it will help create a vibrant and self-sustaining network of startup incubators, accelerators and related programs in Australia.

StartupAUS encourages the government to review the outcomes from the Incubator Support Program over the next two years, and if the program is achieving results, consider expanding it to support a more comprehensive national system of incubators and startup programs.

StartupAUS also notes that a large majority of the existing incubator programs in Australia focus on small businesses rather than startups, and while many of them add value to the businesses they support we believe there is a strong economic argument for directing funding towards incubators which support high-growth businesses that have the potential to generate export income and compete in global markets.

Any review of the Incubator Support Program should be undertaken in the context of the international incubator landscape, of which several examples are provided on the following pages.

// International examples

New Zealand

The New Zealand Incubator Support Program is a national network of eleven startup incubators established by the New Zealand Government in 2001 and now administered by Callaghan Innovation (the country's national innovation agency).

The New Zealand Government recently announced an extension of the program with grants to support a further cohort of tech startup incubators and funding for startups via repayable grants of up to A$420,000 per company.[31,32]

Sweden

Sweden (population 9.5 million) has a national network of 43 startup incubators, 12 seed investment funds and 33 science parks that have been supported by the Swedish Government and regional economic development agencies for the last 20 years.[33]

The government-funded startup incubators together support 950 high-growth technology companies per annum, of which approximately 150 attract venture capital investment.

The tax revenues generated from companies that have been supported by the incubators now exceed the cost of running the program by a factor of 10.[34]

Ireland

Enterprise Ireland directly funds a network of 30 startup incubators,[35] each of which is located on the campus of one of the country's universities. The incubators accept applications from startups whether or not connected with the host university, and aim to stimulate collaboration between academia and startups as well as to support commercialisation of university-generated IP.

The network of Irish incubators currently supports over 200 companies employing over 1,000 people.[36]

[31] callaghaninnovation.govt.nz
[32] nzte.govt.nz
[33] sisp.se
[34] slideshare.net
[35] enterprise-ireland.com
[36] enterprise-ireland.com

Israel

In 1991 the Israeli Government established the Technological Incubators Program,[37] administered by the Office of the Chief Scientist in the Ministry of Economy. Israel currently has 22 incubators which together support approximately 180 companies in various stages of development at any given time.

Each company receives between A$550,000 and A$880,000 in government funding via a grant repayable as a royalty on sales.

The government effectively acts as a co-founder and seed investor, having so far helped launch 1,700 companies with cumulative government investment of over A$760 million. Of these graduates, 60% have successfully attracted private investment, with total private investment in graduated incubator companies now exceeding A$3.9 billion (a five times multiplier on government funds). The Israeli Government invests A$50 million per annum in the program, equating to 85% of the incubators' budgets.

As a direct consequence of the Israeli Government's focus on the tech sector, the internet economy now contributes 6.4 percent of Israel's GDP.[38] In the decade to 2012, 772 Israeli startups were acquired for a total of A$46 billion, and the third quarter of 2013 saw 162 companies raise A$725 million in private capital.[39]

Singapore

The Technology Incubation Scheme is a network of fourteen tech startup incubators established by the Singaporean Government in 2008 and modelled on Israel's Technological Incubators Program.[40,41]

Companies in the incubator network are able to access co-funding investments from the government of up to A$550,000 (on an 85:15 ratio) on recommendation from the Technology Incubator.[42]

Singapore's national entrepreneurship centre of excellence is the Entrepreneurship Centre at the National University of Singapore. It provides a comprehensive suite of entrepreneurship education, support and investment in spinouts and incorporates a A$4.5 million seed fund.

37 incubators.org.il
38 freerangefarm.co.nz
39 forbes.com
40 techinasia.com
41 bit.ly/1mqlD55
42 nrf.gov.sg

India

Since 1982 the Indian Government has been building a national network of tech startup incubators via the National Science & Technology Entrepreneurship Development Board.[44] It now has 120 startup incubators operating across the country.[45]

The incubator program has the stated objective of promoting knowledge-based and innovation-driven enterprises in India. As well as supporting tech startups, the incubators provide comprehensive entrepreneurship education and awareness raising through hackathons and startup bootcamps.

China

The Chinese Government began establishing tech startup incubators in 1987 under the Ministry of Science and Technology's Torch Program,[46] the world's largest government program to support technology entrepreneurship.

In 2013 China had 1,034 startup incubators that together supported around 60,000 startups. The current number of incubators in China is estimated to be 1,500, supporting more than 100,000 tech startups.[47]

Companies that have graduated from China's startup incubators include Huawei (one of the world's largest technology companies) and Suntech Power (the world's largest producer of solar panels).

US

Startup incubators have been prevalent in the US for over 50 years, with 1,400 currently in operation. Each year US incubators support more than 27,000 startups which employ 100,000 workers and generate revenue of more than $17 billion. 94% of US incubators are not-for-profit entities and receive 52% of their funding from government and economic development agencies, with a further 20% from universities.[43]

[43] infodev.org
[44] nstedb.com
[45] ieri.org.za
[46] steveblank.com
[47] papers.ssrn.com

// Insolvency reform

The government has committed to amending the Corporations Act to address issues with insolvency laws as part of NISA. The proposed amendments include:

- Reducing the current default bankruptcy period from three years to one year
- Introducing a 'safe harbour' for directors from personal liability for insolvent trading if they appoint a restructuring adviser to develop a turnaround plan for the company
- Making 'ipso facto' clauses, which allow contracts to be terminated solely due to an insolvency event, unenforceable if a company is undertaking a restructure

// Status:

A proposals paper was released for comment in April 2016. The proposed amendments have not yet been enacted.

// StartupAUS perspective:

StartupAUS believes the proposed amendments to the Corporations Act will have the desired effect of encouraging entrepreneurial risk-taking and will ultimately lead to improved economic outcomes. These changes will help bring Australia into line with international best practice, and will reduce the disincentive for experienced, high-profile directors to join startup boards.

// Tax treatment of Employee Share Schemes

In 2015 the government introduced new reforms to address the situation that had existed in Australia since 2009 in which options given to employees were taxed at the time of issue, rather than at the time they received the proceeds.

// Status:

The amendments took effect for new shares and options issued from 1 July 2015.

// StartupAUS perspective:

StartupAUS strongly commends the government for removing this handbrake on the sector.

With some targeted improvements to the legislation, Australia could have a world-leading ESS regime which empowers startups to recruit and retain the world's best talent. Further comments on scope for improving the ESS legislation are provided in Recommendation 5.

// Landing pads

The National Innovation and Science Agenda committed $11.2 million in the 2015–16 budget to establishing five Landing Pads and to developing a new annual in-bound innovation forum, which is intended to "foster collaboration and attract international market experts, entrepreneurial talent and investors to Australia."

// Status:

Landing pads are now operational in San Francisco and Tel Aviv and additional landing pads will soon be operational in Shanghai, Berlin and Singapore.

// StartupAUS perspective:

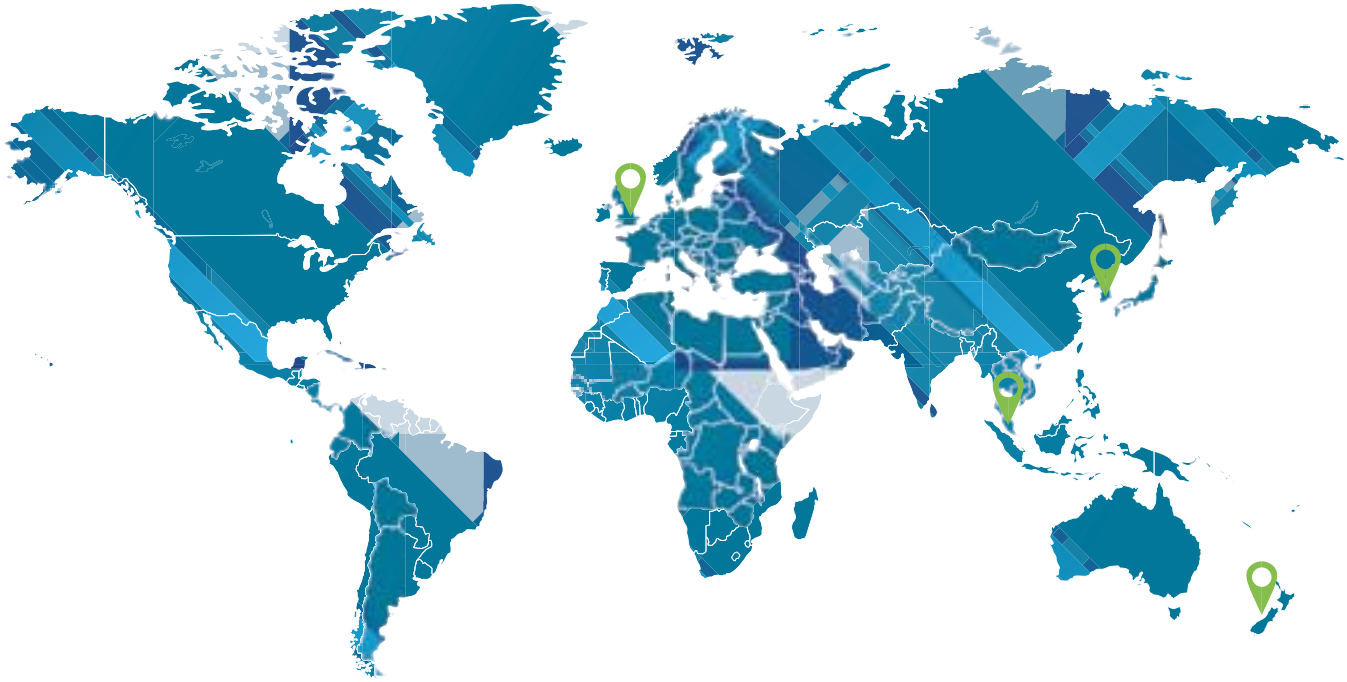
The establishment of a Silicon Valley landing pad was recommended by StartupAUS in the 2014 and 2015 Crossroads reports. StartupAUS is pleased to see multiple landing pads being implemented, and is confident that they will have a positive effect on Australian startups expanding into international markets.

However, the implementation of the landing pads has not been without some challenges, notably:

- The landing pads are to be managed by the government (Austrade), which has limited experience working with startups.
- The choice of locations has been the source of much debate. Whilst San Francisco and Shanghai are obvious choices to support startups entering the US and Chinese markets respectively, it is less clear that significant numbers of Australian startups would seek to have a presence in Israel or Berlin. Singapore represents a potentially attractive location to which Australian startups might consider relocating, due to the generous incentives provided by the Singaporean Government. It is however an unusual location for a startup landing pad, given the government's stated role for the landing pads is to provide only a short-term (90 day) operational base.

Nevertheless, it is encouraging to see Australia's startup agenda take a broad global perspective. We would encourage creative thinking about the value proposition which might be delivered to startups in landing pads outside the more obvious destinations. StartupAUS is committed to working with Austrade and the startup sector to explore ways that the landing pads might maximise impact and expand the reach and opportunity of Australia's startups.

INTERNATIONAL POLICY FRAMEWORKS



// International entrepreneurship policy frameworks

A growing number of countries have sought to accelerate the growth of their startup ecosystems and more broadly develop their national innovation systems as they seek to transition from low-tech to high-tech economies.

StartupAUS believes that Australia can learn a great deal from studying the approaches taken in other countries and ensuring that we implement global best practice while at the same time avoiding policy ideas that have been proven to be ineffective elsewhere.

This report seeks to identify best practice and provide examples of policies and programs that have been effective in addressing market failures similar to those experienced in Australia.

A number of countries have been selected for particular attention due to their similar economic conditions and/or similar challenges faced as they seek to bring about economic transformation. The following pages summarise the primary startup-focused policies and programs currently being delivered in Singapore, the UK, New Zealand and South Korea, and the following sections also identify specific programs in many other countries.

According to the OECD, "governments play a key role in fostering a sound environment for innovation, in investing in the foundations for innovation and helping overcome certain barriers. Innovation in the 21st century has a strong and ever growing basis in the digital economy."[48]

[48] OECD (2015), The Innovation Imperative: Contributing to Productivity, Growth and Well-Being, OECD Publishing, Paris. DOI: www.dx.doi.org

The OECD recently released a report titled 'The innovation imperative' suggesting that innovation thrives in environments that contain the following features: [49]

- Skilled workforce that can generate new ideas and technologies;
- Sound business environment that encourages investment in technology and in knowledge-based capital;
- Strong and efficient system for knowledge creation and diffusion that invests in the systematic pursuit of fundamental knowledge;
- Policies that encourage innovation and entrepreneurial activity;
- Strong focus on governance and implementation. Evaluation of policies needs to be embedded into the process, and should not be an afterthought.[50]

The OECD's 2010 Innovation Strategy emphasised the importance of a strong framework for innovation, including sound macroeconomic policy, competition, thriving markets, openness to international trade and investment, innovation-friendly tax systems, and financial systems that support innovation activities.[51]

[49] OECD (2015), The Innovation Imperative: Contributing to Productivity, Growth and Well-Being, OECD Publishing, Paris. DOI: www.dx.doi.org

[50] Ibid

[51] Ibid

// Singapore

In 2008, Singapore's President Tony Tan visited Tel Aviv and witnessed Israel's success in building a vibrant knowledge-intensive economy.

Shortly afterwards, the Singaporean Government launched its own National Framework for Innovation and Enterprise, based on the Israeli approach of boosting high-impact entrepreneurship through education and providing financial support to high-growth companies. The Singaporean Government committed A$1.1 billion over the five years to 2015 to boosting innovation and entrepreneurship as part of a broader A$14 billion funding package for research, innovation and enterprise. Its stated goal included shifting the country's economy from labour-driven to productivity-driven industries by supporting research, innovation and entrepreneurship, and fostering the creation and growth of at least five local technology companies with annual revenues of more than A$1 billion.[52,53,54]

The latest innovation plan for Singapore, the Research Innovation and Enterprise 2020 Plan, was launched at the beginning of 2016. The government demonstrated its commitment to developing its knowledge-based, innovation-driven economy, by again increasing the budget by a further A$3 billion.[55]

The Singapore Government's suite of programs is overseen by the national innovation agency SPRING Singapore, and includes a network of 15 government-funded startup incubators, matching funds to catalyse formation of venture capital funds, government co-investment with private investors, a grants scheme to support startups by funding up to 50 per cent of technical staff salaries, and multiple programs to develop entrepreneurship education in schools and universities.

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[52] National Research Foundation, Prime Minister's O ce, Singapore, National Framework for Research, Innovation and Enterprise, (2014),www.nrf.gov.sg

[53] National Research Foundation, Prime Minister's O ce, Singapore, Research, Innovation and Enterprise (RIE) 2015, (2014), www.nrf.gov.sg

[54] National Research Foundation, Prime Minister's O ce, Singapore, Innovation and Enterprise milestones, (2014), www.nrf.gov.sg

[55] Singapore Ministry of Trade and Industry, Research Innovation Enterprise 2020 Plan: Winning the future through science and technology, 2016

// Singapore (cont)

The RIE 2020 Plan is focused on building an ecosystem full of high performing innovative firms, strong linkages and collaboration between private-private and private-public entities, which will deliver strong economic returns and jobs in R&D and innovation.[56]

The priority actions in the plan are to:[57]

1. Provide targeted support to help firms scale up.
    - Government will provide equity co-investment funds for startups. The support will cover early-stage seed funding to post Series A, to help startups scale up.
    - Government will partner with multi-national corporations to co-invest in promising startups, incubators and accelerators. This will allow startups to access the management expertise and global supply/ marketing networks of large firms.
2. Foster stronger collaboration and cohesion.
    - The role of Technology Transfer Offices in public research organisations will be expanded to include technology transfer, entrepreneurship education and incubation services to form integrated Innovation & Enterprise Offices (IEOs).

Government will establish a central fund that supports national collaborative initiatives amongst IEOs.

[56] Ibid
[57] Ibid

// Singapore (cont)

The specific programs delivered by the Singaporean Government to support startups include:[58,59,60,61]

- Technology Incubation Scheme – A network of 15 government-funded startup incubators
- Early Stage Venture Fund – invests on a 1:1 matching basis to catalyse formation of venture capital funds that invest in Singapore-based technology companies
- Co-investment of up to A$440,000 in Singaporean startups (to match private investors 85:15)
- Startup Enterprise Development Scheme – a startup co-investment program in which the government invests alongside VC funds matching dollar-for-dollar up to A$900,000
- Business Angels Fund – a startup co-investment program in which the government matches approved angel investors on a dollar-for-dollar basis up to A$1.3 million
- Technopreneurship Investment Fund – a A$1.1 billion venture fund that invests up to A$3 million in local startups and international startups prepared to relocate to Singapore.
- Technology Enterprise Commercialization Scheme – a grants program in which the government provides funding of up to A$440,000 to support development of proprietary ideas at conceptualisation stage
- iSTART Accelerate – a grants scheme to support startups in developing technologies by funding up to 50% of salaries of five technical staff for one year up to A$220,000
- Young Entrepreneurs Scheme – a national program to develop entrepreneurship education in schools
- NUS Overseas Colleges - an overseas immersion program that places 200 students per annum as interns for 6-12 months in startup hubs such as Silicon Valley, Beijing, Stockholm and Tel Aviv
- Revision of bankruptcy laws to protect entrepreneurs who take normal business risks and fail
- Tax deductions for investors in startups
- Concessional tax rates for startups – corporate tax rate of 0% on the first A$90,000 of taxable income, 8.5% on the next A$180,000 and 17% above A$270,000
- Relaxation of criteria for startups to list on the stock exchange
- Deferral of capital gains tax by startup employees for up to four years under an Employee Stock Option Scheme

[58] guidemesingapore.com
[59] business.asiaone.com
[60] www.wsj.com
[61] www.slideshare.net

// UK

Over the last decade the UK Government has implemented a raft of policies and programs aimed explicitly at supporting high-growth, globally focused businesses. These include:

- UK Angel CoFund – a A$185 million early stage matching fund to support the growth of an angel investment sector
- Startup Loan Scheme – a A$285 million program to provide seed capital and mentoring to early stage businesses
- Enterprise Capital Fund program[62] – a A$440m program to support the creation of new early stage venture capital funds
- Future Fifty program to identify and directly support fifty of the most promising high-growth companies with bespoke assistance and incentives
- Aggressive inward investment attraction programs, including actively encouraging startups from other countries to relocate to Tech City in London
- Entrepreneur Visa to encourage the best entrepreneurs from around the world to establish their business in the UK
- Global Entrepreneur Programme[63] to attract high-calibre, early-stage companies and entrepreneurs to set up in the UK by offering bespoke advice and capital raising assistance from a team of experienced entrepreneurs
- Entrepreneurs' Relief program to provide a reduced capital gains tax rate of 10% for startup founders who sell their business
- Enterprise Investment Scheme (EIS) and Seed Enterprise Investment Scheme (SEIS) to stimulate early stage investment by providing upfront income tax relief and capital gains tax exemption for angel investors

[62] capitalforenterprise.gov.uk
[63] www.ukti.gov.uk

// UK (cont)

- UK Innovation Investment Fund – a A$300 million fund that co-invests with private sector investors in high growth, knowledge-based businesses
- Business Finance Partnership – a A$2.2 billion program to improve access to finance for growing businesses by providing matching funds alongside private investors
- Changes to IPO regulations to catalyse higher rates of technology company listings
- Entrepreneurship promotion in schools via business immersion programs, guest talks by entrepreneurs
- Competitions with A$28 million in prize money to encourage digital entrepreneurship
- Establishment of Innovate UK as the UK's innovation agency, with oversight of a range of innovation programs and input to government innovation and economic development policy

The UK currently has an Economic Complexity Index Ranking of 11th out of 144 countries.

// New Zealand

Callaghan Innovation was established in 2013 to accelerate the commercialisation of innovation by New Zealand firms. Through its streamlined innovation policy it provides several business innovation and support programs. By 2015 it had awarded $NZ500million in grants to high tech manufacturers and software and digital businesses.[65]

In the 2016 Budget, the New Zealand Government announced that it would invest $410.5 million over four years in science and innovation through the Innovative New Zealand package. By 2020, the annual investment in science and innovation will have increased by to $1.6 billion. This is one of the largest single investments in science and innovation in New Zealand's history.[66]

New Zealand has embarked on a deliberate effort to transition its economy from its historical reliance on tourism and primary industries to one based on high-growth knowledge-based businesses. A range of government programs have been launched over the last ten years, including:

- Entrepreneur Visa to attract foreign entrepreneurs to establish high growth businesses in New Zealand
- Visiting Entrepreneur initiative to engage experienced US entrepreneurs and angel investors to help accelerate the growth of a vibrant startup ecosystem
- Incubator Support Program – a national network of eleven government-funded startup incubators
- Grant funding of up to A$430,000 per company for startups supported by the government-funded incubators[67]
- Pre-Seed Accelerator Fund[68] - $12 million to attract commercial investment to promising publicly-funded research
- Callaghan Innovation's Accelerator Programme will be supported with $3 million, after positive results from the pilot programmes
- Implemented regulatory changes enabling crowd-sourced equity funding from April 2014

[65] afr.com
[66] mbie.govt.nz
[67] angelassociation.co.nz
[68] OECD (2014), "New Zealand", in OECD Science, Technology and Industry Outlook 2014, OECD Publishing. dx.doi.org

// New Zealand (cont)

- Opened the first stage of GRID AKL, a 48,000m^2 innovation precinct on the waterfront in Auckland to house and support technology-based businesses, venture capital firms and angel investors, and act as a hub for entrepreneurship in New Zealand in the same way as Tech City in London
- Announced a similar innovation precinct to be built in Christchurch
- New Zealand Seed Co-Investment Fund – a A$37m early stage direct investment fund to stimulate greater levels of angel investment
- New Zealand Venture Investment Fund – a A$150 million direct investment fund to stimulate greater levels of venture capital investment
- Kiwi Landing Pad – a startup support program in San Francisco to assist New Zealand startups establishing a presence in the US
- Establishment of Callaghan Innovation as the country's national innovation agency with a focus on high growth technology-based businesses

In the latest Global Innovation Index (2015-2016) New Zealand ranked 15th, two spots ahead of Australia. The World Economic Forum Global Competitiveness report (2015-2016) ranked New Zealand 16th in the world, five spots ahead of Australia.

// South Korea

In 2013 the South Korean Government announced a "Creative Economy" initiative,[69] a A$4 billion funding commitment to accelerate the growth of the country's startup sector. The initiative is part of President Park Geun-hye's efforts to reduce the country's dependence on low-value manufacturing and to stimulate creation of new high growth businesses.

The Korean Creative Economy initiative includes:[70]

- A national startup promotion program to encourage more people to become entrepreneurs
- Free entrepreneurship education for primary, secondary, high school and university students and the general public
- A$100 million startup co-investment fund to encourage greater levels of angel investment in startups[71]
- Funding for a network of 300 startup incubators that together support 5,000 Korean startups
- Conversion of 1,000 public libraries into new "innovation centres" to incubate startup ideas and engage the population in entrepreneurial thinking
- Funding for international engagement such as hosting of the MIT Global Startup Workshop and multiple trade missions to Silicon Valley, London, Israel and Singapore
- Tax incentives for investing in startups

[69] online.wsj.com/
[70] www.kised.or.kr
[71] antimeridiangroup.com

// South Korea (cont)

- Establishment of 25 "App Creation Playgrounds" in which aspiring entrepreneurs can access technical support to build new apps and tackle global markets
- Funding for startup internships to place university students within growing startups
- Funding for entrepreneurs who have had failed businesses (in recognition of the stigma attached to business failure)
- Establishment of government-backed early stage investment funds
- Funding to universities specifically for commercialisation of research outcomes
- Mandated access to IP generated in the country's universities for Korean startups

South Korea has seen a steady improvement in its Economic Complexity Index ranking, now ranked 6th out of 144 countries.

UTS
UNIVERSITY OF TECHNOLOGY SYDNEY

The idea that entrepreneurship can be 'taught' is a controversial one. So, what role can the education sector play in fostering entrepreneurship and influencing the innovation agenda more generally?

In 2015, the Crossroads Report's action plan called for a national program of entrepreneurial education. The University of Technology Sydney (UTS) agrees.

Vice-Chancellor Professor Attila Brungs has said universities need to "rethink the type and balanceof skills people will need and fundamentally reimagine how we support them acquiring these skills".

The education sector has a role to play not just in enhancing STEM skills but also in:

- Encouraging an entrepreneurial mindset in students and academics.
- Supporting students as they transition into the entrepreneurial ecosystem.
- Fostering collaboration between people with deep domain knowledge
- Helping entrepreneurs develop the skills they need for successful implementation, and to scale up.
- Providing access to research and infrastructure otherwise not readily available to startups and SMEs.

At UTS that has translated into ground-breaking undergraduate programs, a new MBA in Entrepreneurship (MBAe), and tangible support for alumni with early-stage ventures. Collaboration with industry and engagement with the startup and innovation ecosystem are integral to those efforts.

Teaching Entrepreneurship – In addressing the gap in entrepreneurship education, UTS has developed Australia's first campus-based MBA in Entrepreneurship. Introduced this year, the program offers entrepreneurs three graduate certificates in commercialisation, entrepreneurship and new venture funding that can be taken separately or combined in a one-year intensive MBA program. These are supported by masterclasses led by practitioners and entrepreneurs with deep knowledge in areas such as innovation and new business models.

Collaboration – Innovation and creativity do not happen in isolation. We need deep domain expertise mixing with diverse skills and perspectives to identify opportunities and properly tackle the big challenges facing Australia.

So, UTS has invested heavily in creating groundbreaking, multi-disciplinary degrees and programs. The world-first Bachelor of Creative Intelligence and Innovation, for example, can only be combined with another degree, thus bringing students from business, health, science, the arts, engineering and others together to collaborate on innovative ideas.

The UTS Hatchery programs also create spaces where students from any discipline can come together.
In the Hatchery pre-incubator, students work closely with industry mentors and are challenged to apply a startup mentality to solving real world issues.
The Hatchery+ program provides early-stage ventures founded by UTS students and recent graduates with a co-working space, mentorship and masterclasses. Hatchery+ alumni include Dr Jordan Nguyen, with Psykinetic, a social business creating assistive technology such as eye-controlled software and hardware.

Industry involvement – UTS is committed to an educational environment where students and industry build relationships and expertise alongside each other. The Hatchery and MBAe programs actively engage industry partners and members of the startup and innovation community as coaches and mentors, connecting participants into the startup ecosystem from the earliest point.

Meanwhile, UTS is making available infrastructure such as the Data Arena – a 360-degree interactive data visualisation facility – to government and business, including startups.

In addition to specific initiatives like the MBAe, universities must build entrepreneurial and creativity attributes into all their programs, across all faculties, Professor Brungs says.

"Innovation walks on two legs so Universities must reach out to partner with the entrepreneurial community. The close proximity and active engagement of vibrant universities and a critical mass of entrepreneurial enterprises is the single key success factor in successful entrepreneurship precincts around the world," Professor Brungs says. "Based as we are in the vibrant startup hub of Ultimo-Pyrmont, we aim to be a key player in the emergence of Sydney's – and Australia's – innovation and entrepreneurship story."

THE IMPORTANCE OF STARTUPS

// Startups drive economic growth

According to The Economist,[72] the startup sector worldwide is undergoing a Cambrian explosion, with the low cost and ubiquity of building blocks for tech startups leading to more entrepreneurs tackling billion dollar markets than at any time in history.

Research conducted by Enrico Moretti, Professor of Economics at the University of California, Berkeley and an expert on the future of economic growth, suggests 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.[73] He notes that this multiplier effect is three times larger in the technology sector than in extractive industries (such as mining) 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.

By way of example, Facebook employs approximately 1,500 people in its Menlo Park headquarters, but in doing so has indirectly created an estimated 53,000 jobs for Facebook app creators and 130,000 jobs in related business services. Similarly, Apple employs 12,000 people in Cupertino and in doing so has indirectly created over 60,000 jobs supporting the company and its employees.[74]

[72] techcrunch.com
[73] Enrico Moretti, The New Geography of Jobs: Mariner Books
[74] Moretti, ibid

A study by the Kauffman Foundation[75] 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.

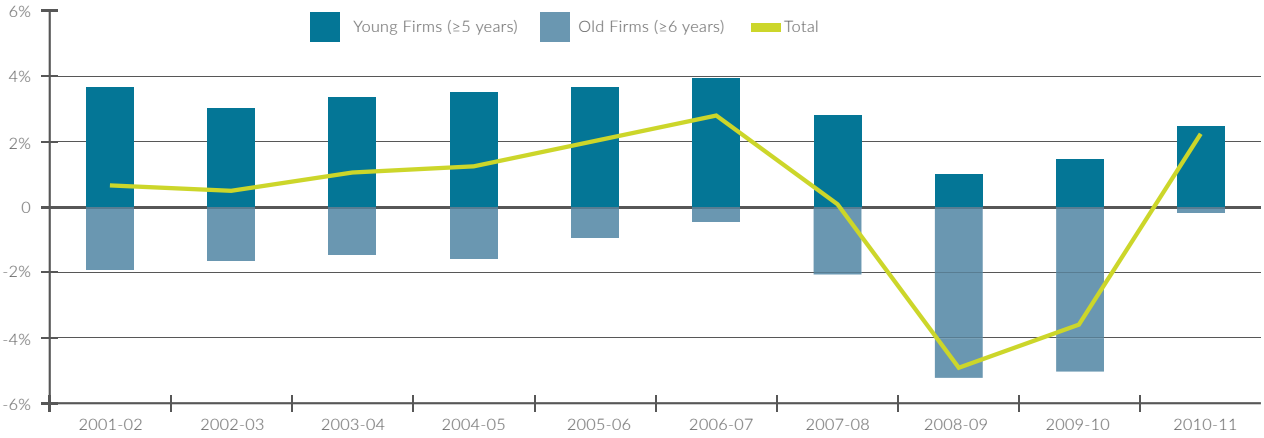


Figure 2: Net job growth: new versus established firms, 2001-11 (average over 15 countries)[78]

The UK's Centre for Economics and Business Research[76] found that high growth companies (those with more than 20% growth per year) generated 256,000 new jobs 2012-13, or 68% of the total new jobs created in that period, whilst only accounting for 1% of all UK businesses.

Based on this and similar research in other countries, the UK Government has increasingly taken an economic policy approach of focusing support on the relatively small number of companies with the highest growth potential, rather than broad support programs for new businesses and SMEs.[77] According to NESTA's Chief Executive Jonathan Kestenbaum, *"Backing excellence and innovation is not an elitist policy: rather, it is the best way of generating employment and opportunity."*

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 been net job destroyers.

[75] kauffman.org
[76] highgrowthsmallbusiness.co.uk
[77] www.nesta.org.uk
[78] ncp-incontact.eu

Data from the Australian Department of Industry shows that new firms create substantially more jobs than established ones, and that in Australia firms of up to three years old had created 1.44 million jobs over the six years to 2011 compared with a net loss of 400,000 jobs by established firms over the same period. The report notes that *"the bulk of this employment growth is driven by a relatively small number of high-growth-orientated startups".*

The Office of the Chief Economist's 2015 Innovation System Report notes, *"While innovative entrepreneurship can disrupt competitive markets, it also has the potential to nurture business dynamism and economic growth. Like many OECD countries, Australia is in the midst of an economic transition. Australia's situation is different in that it is not so much seeking recovery from a downturn as searching for new sources of growth to balance the relative decline in resources sector investment. The role of the entrepreneur is central to this process."*[79]

Furthermore, technology-based companies are consistently able to generate jobs with much higher labour productivity (revenues per employee) than any other sector, as Figure 3 illustrates.

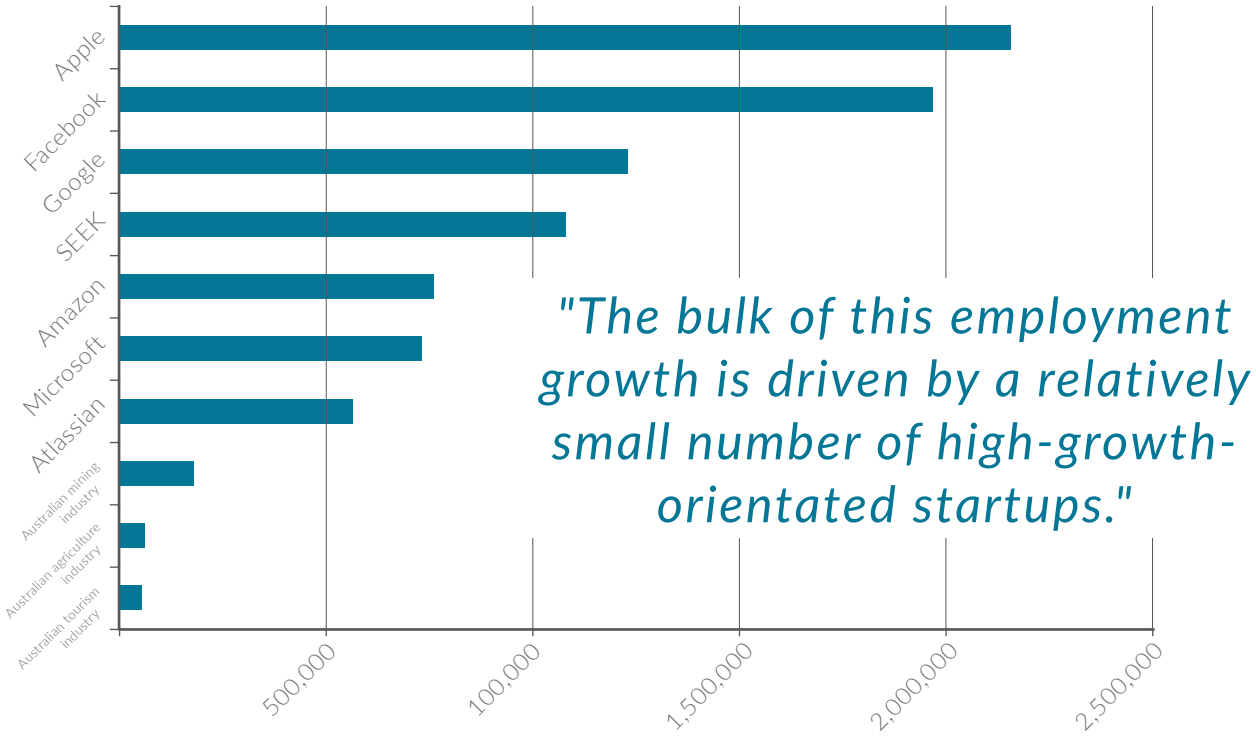


Figure 3: Revenue per employee – selected companies and industries[80]

[79] industry.gov.au

[80] Sources: ABS, Mashable, gazelles.com, company annual reports

At the same time, it is well understood that technology is displacing jobs in many parts of the economy, and will continue to do so. According to research from the University of Oxford, software and automation will replace close to half of all low knowledge-intensity jobs over the next 20 years.[81] Countries that do not support the growth of technology-based industries will increasingly find that their economy is dominated by low value, low knowledge-intensity jobs that service high value industries in other countries.

According to Bjoern Lasse Herrmann, author of the Global Startup Ecosystem Report, high impact entrepreneurship is more important than ever. Herrmann reports that:

"There is almost nothing more important to the global economy. As the industrial economy falls away with increasing speed and half the world's current jobs will be replaced by software, it becomes critical to build thoughtful programs to nurture the entrepreneurial renaissance that will take its place."[82]

[81] oxfordmartin.ox.ac.uk
[82] techcrunch.com

// Startups drive disruption (and that's a good thing)

Tech startups exist in any industry in which technology is an enabler of growth, including engineering, biotech, pharmaceuticals, energy, health, education, agriculture, technology hardware and software. However, a particular focus of this paper is the opportunities presented by the internet as an enabler of disruptive innovation.[83]

Startups are now able to reach the three billion consumers connected to the internet, and do so with significantly lower levels of capital investment than at any time in history.

Many industries are in the process of being transformed by online business models, providing entrepreneurs with an unprecedented opportunity to create economic growth, wealth and jobs. Startups in all corners of the globe are aggressively competing to share in the massive redistribution of revenues enabled by the removal of geographic trade boundaries.

The internet has opened up new opportunities for companies in Australia which have historically been constrained by operating in a small domestic market. At the same time it has exposed startups to new competition from every corner of the globe instead of just a handful of domestic competitors.

Over the last fifteen years just nine software companies have grown to a point where they collectively contribute A$1.3 trillion to the US economy, or over 6% of US GDP.

Examples of industries that have been reshaped by digital disruption:

Industry	Advertising	Books	Music	Retail	Movies /TV
Disruptor	Google	amazon		ebay	NETFLIX
Market capitalisation (A$)	**$710 billion**	**$485 billion**	**$760 billion**	**$46 billion**	**$57 billion**

[83] claytonchristensen.com

As famously pointed out by Netscape founder Marc Andreessen, "software is eating the world". Industriesare increasingly dominated by software companies, with a growing number of products and servicesnow being delivered online.

According to data analytics firm Boundlss,[84] 25% of the Australian economy is likely to be directly impacted by software by 2025, which equates to A$524 billion of GDP. More importantly, 5.5% of the Australian economy, or A$115 billion in direct revenues, could be captured by software companies by 2025.

The companies that will drive global economic growth over the next decade will be technology companies, many of which do not exist today. As noted by Boundlss, the key question for Australia is whether these companies are home-grown (in which case Australia stands to benefit from their economic impact) or "international Vikings" that displace local businesses and take revenues offshore.

Uber is an example of a US-based tech company that has experienced rapid growth in Australia. It has captured nearly 10% of the Australian taxi market in under 2 years and is turning the global taxi industry on its head. Uber currently has an estimated market capitalisation of A$60 billion, but its economic impact in Australia will be limited,[85] whilst in the US it is creating substantial wealth and high-value jobs, and in time will likely spawn hundreds of new startup founders and investors.

The scale of economic impact being made by technology companies can be seen in many countries, including in the US, where over the last fifteen years just nine software companies[86] have grown to a point where they collectively contribute A$1.3 trillion to the US economy, or over 6% of US GDP.[87] The combined value of just three of these companies – Apple, Google and Facebook – now exceeds the value of the entire ASX.

The companies that capture the economic rent in the industries of the future will be those that are able to implement technology and business model innovation faster and more effectively than their competitors. The losers will be startups that are constrained by inexperience, lack of technical skills, lack of capital or uncompetitive regulatory environments.

Given the speed at which technology is pervading every industry, Australia has no choice but to embark on an economic transformation in which it actively develops an environment that is conducive to the creation and growth of technology-based business that are capable of competing on a world stage.

[84] medium.com
[85] www.zdnet.com
[86] Amazon, Google, Salesforce, VMware, Facebook, Twitter, Groupon, Zynga and Apple
[87] blog.startupcompass.co

// Startups need to scale up

A commonly expressed view in Australia is that startups don't create large numbers of jobs and therefore can have limited impact on the broader economic prospects of the nation.

This view fails to take into account the fact that formation of startups is not an end-point in itself, but a necessary step in creating 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.

This misconception has arisen in Australia partly because we have very few examples of technology companies that have gone on to achieve substantial global growth and create large numbers of jobs. Currently none of the top 50 companies listed on the ASX (by market capitalisation) are software companies, compared to 16% in the US and 6-10% in South Korea, the UK, Singapore and Canada, as shown by the following chart.

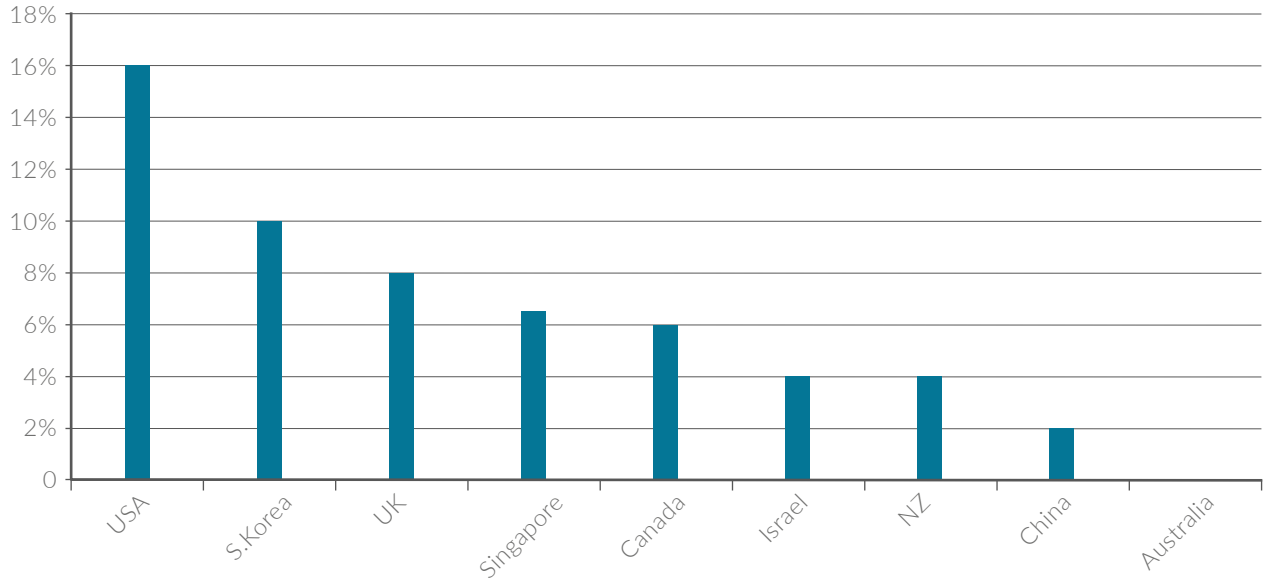


Figure 4: Software companies as a percentage of top 50*listed companies (Source: KPMG analysis)[88]
*Singapore analysis conducted on top 30 listed companies

Even Australia's most successful software company, Atlassian, has yet to achieve its full impact in terms of economic impact and job creation, notwithstanding that had it listed in Australia it would currently rank in the mid-40s on the ASX by market capitalisation, ahead of Australian icons such as Qantas and Harvey Norman.

[88] Top 30 companies for Singapore

For Australia to reap the benefit of startups it is essential that three conditions are met:

1. We must produce large numbers of startups;
2. We must ensure that some of these startups are going on to achieve significant globalgrowth; and
3. We must ensure that the most successful startups retain a sufficient connection to Australia so that we are able to benefit from their success.

Over the last five years Australia has seen strong growth in the rate of startup formation, but as yet it is less evident that we are achieving global growth, and among the most promising companies we are witnessing a continued trend for those companies to leave Australia in search of more favourable conditions.

Many of Australia's most promising startups fail to reach their global growth potential due to a combination of lack of capital and a lack of guidance and support from others who have experience in taking companies global.

A number of the recommendations in this report are aimed specifically at supporting the continued growth of the most promising Australian startups, ensuring that they achieve their full potential, and ensuring that Australia benefits from their success.

StartupAUS notes that the government has flagged an interest in establishing an Innovation Fund to support Australian technology companies that are ready to scale internationally.

Such a fund would be a welcome addition to the announcements made in the National Innovation and Science Agenda, and would complement the government's existing $200 million CSIRO Innovation Fund and $500 million Biomedical Translation Fund.

StartupAUS believes there is also scope for the government to explore less capital-intensive approaches to maximising the growth of Australian technology companies.

A relevant example is the UK's Future Fifty program[89] through which the government selectively supports fifty of the highest growth emerging companies. The program matches the most promising high-growth companies with publicly funded schemes and incentives relevant to their stage of growth and specific needs. A dedicated team provides a concierge-style service connecting companies with support and advice to facilitate continued growth over the year in which they take part in the program.

Specifically, the Future Fifty program provides access to expertise within government and the private sector, builds links to the UK's institutional investor base, and offers tailored support to help companies grow rapidly and establish the foundation for IPO readiness, M&A and global expansion.

The 100 companies supported since 2013 have gone on to raise a combined A$2.3 billion in funding, employ 19,000 people and generate revenues of A$3.7 billion. Ten have been acquired and five have completed public listings.[90]

StartupAUS encourages the government to consult widely within the tech sector and venture capital industry in developing any such fund, and provides the following initial perspective on how such a fund might operate.

[89] futurefifty.com
[90] techcity.s3.amazonaws.com

// Implementation of a National Innovation Fund

Contributed by

Teresa Engelhard,
Director, StartupAUS

There aren't many Silicon Valley natives in Canberra so I've been welcomed and consulted by many government folks who are keen to bolster Australia's innovation ecosystem. My most common refrain: "the R&D Tax Incentive is the highest impact program, the crown jewel, the backbone of what is working in Australia....don't muck it up!" The recent R&D tax review recommends some moves in the wrong direction that, if implemented, would damage many startups and scale-ups; we need to work with government to make sure this doesn't happen. And what next? There has been talk of a National Innovation Fund to provide a mechanism for government to help fast-growing companies scale even more quickly. If well targeted and well implemented, that's a good idea.

I've spoken to a range of stakeholders in scale-ups and venture capital firms, and some key principles have begun to emerge.

Target scale-ups. Scale-ups are successful startups that have proven their business model and are growing. Scale-ups are the fastest creators of jobs, export revenue and wealth in the economy. Australia should make funding and retaining them a top priority and a National Innovation Fund could help. Because there are no large later-stage venture funds in Australia, winning scale-ups tend to turn to international funds for expansion capital. The largest venture funds in Australia, at $250 million, are tiny compared to multibillion dollar U.S. funds for which $30 million to a single company is a small financing.

The devil is in the details, of which there are many, but here are some high-level recommendations and guiding principles:

1. Clear eligibility requirements and predictable, commercial timeframes. These objectives should be paramount
    - Boiler plate terms and legal documents, and a 45-day approval cycle to align with commercial co-investors
    - Funds should be available to all applicants that meet eligibility requirements
    - Investment committee approval should focus on eligibility confirmation and sanity check – not on "picking winners," including not picking fund managers

2. Invest directly into companies, align with commercial equity, and use low-risk structure

- The government should invest directly into companies, not award a fund to selected managers
- Government equity should be senior to commercial equity to enable it to be a low risk and passive investor. The government should be "first in line" for modest returns in exchange for subordination to the government, commercial equity holders will capture the majority of upside and can achieve higher rates of return
- An example structure would be one in which the government receives a fixed return (capitalised until exit, with no ongoing repayments) plus 10-20% of the value in equity
- Target company valuations: $50-500 million. Quality metrics are key – scale-ups must have established value, proven revenues, and actual or clearly achievable profitability
- Enable Australian equity holders (VCs, high-net worths and founders) to achieve large, later-stage financings that are minimally dilutive
- Complementary with international equity. Because top-tier international funds can already provide $30+ million financings, they won't gain as much as local investors and can expect greater competition in Australia, but they would also benefit by participating to lower their cost of capital

3. Boost and amplify the Australian innovation ecosystem

- Go big. $2–4 billion in investible capital. Budget neutral, evergreen design
- Eligibility requirements should include factors that benefit Australia such as Australian-based employees, Australian ownership, Australian tax domicile
- Scale-ups often take many years to realise benefit from accumulated tax losses – and thus are actually penalised for investing in growth by the current tax system. There is an opportunity and significant ecosystem upside for the ATO to work with a National Innovation Fund. For example, the government should allow accumulated losses and unrealised R&D tax credits to be credited against National Innovation Fund repayment.

// We need to retain the most successful startups

Currently many of Australia's most promising technology companies have a significant part of their operations and staff offshore as they seek to enter international markets and access greater pools of talent than are available in Australia. In addition, much of their capital is sourced offshore and the investor returns from those investments are offshore, most of their taxes are paid offshore, and in some cases the business has been domiciled offshore.

Even in the case of very early stage startups a trend has emerged for Australian tech entrepreneurs to form a US Delaware C-Corp at the outset instead of an Australian Pty Limited company on the basis that the future of their business will lie largely outside of Australia.

If Australia is to grow a world class startup ecosystem it is essential that we create an environment that is conducive not just to the creation of successful technology companies, but also to the retention of those companies for long enough that we can harness their economic impact.

Some of the most successful technology companies are referred to as "unicorns", a term that has become widely adopted worldwide as a label for tech startups that achieve a market capitalisation of $1 billion or more. Companies that achieve this scale are relatively rare (hence the term), but are vital to the creation of a vibrant startup ecosystem. When they achieve a liquidity event (or exit) via IPO or acquisition, their impact is to spawn hundreds (or thousands) of new entrepreneurs who were formerly employees, many of whom will go on to form their own startups and invest in others.

The effect of unicorns can be seen in cities such as San Francisco, in which the presence of companies such as Salesforce, Twitter and Yelp have increased the city's value as a location from which to launch and grow other tech startups. These companies act as an attractant for other entrepreneurs to locate their companies there, and for investors and service providers to locate alongside this valuable pipeline of opportunities.

The IPOs of Google, Facebook and Twitter together created close to 4,000 millionaires, many of whom will go on to start, invest in and mentor the next wave of companies and entrepreneurs. After it was acquired by eBay in 2002, PayPal's founders and early employees went on to form Tesla, SpaceX, and Solar City (Elon Musk), Palantir (Peter Thiel), LinkedIn (Reid Hoffman), YouTube (Chad Hurley and Jawed Karim), Yammer (David Sacks), and Yelp (Russel Simmons). Each of these companies is a unicorn in its own right.

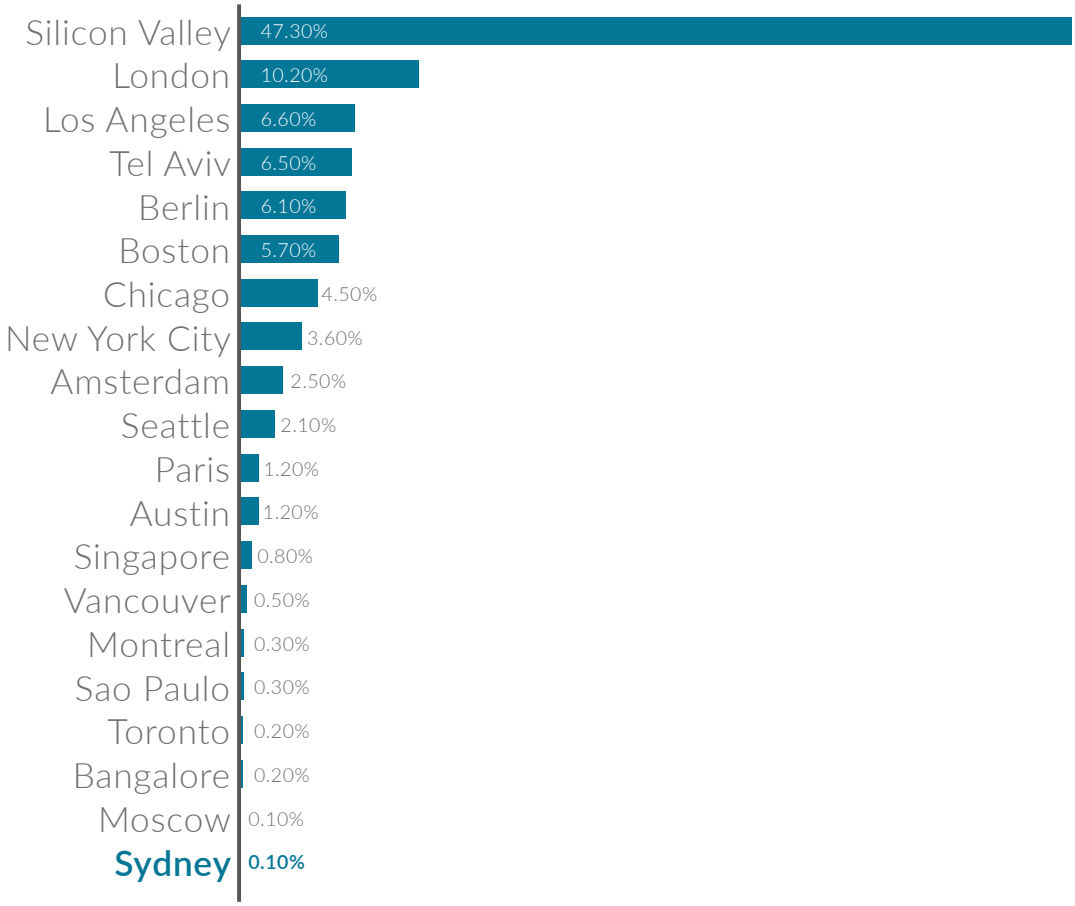
The impact of unicorns in helping to grow startup ecosystems can also be seen in Israel where, as a result of acquisitions of successful startups such as NDS (acquired by Cisco for $5 billion) there are thousands of serial entrepreneurs who have cycled back into the local startup ecosystem to become angel investors and advisors to the next generation of entrepreneurs.[91]

Similar examples can be seen in countries such as Sweden (eg. Skype, acquired by Microsoft for $8.5bn and Spotify with a current market capitalisation of $4bn) and the UK (eg. Betfair $2.4bn IPO and lastminute.com, acquired by Sabre for $1.1bn).[92]

Australia is greatly improving as an environment from which to launch a tech startup, but it has not yet established itself as a location in which to grow a global technology company.

The Compass report considers the Sydney startup ecosystem as a proxy for the Australian ecosystem, and notes that whilst it has grown in the past three years it is producing relatively few exits by global standards, as shown by Figure 5.

Figure 5: Total exit volume, 2013 and 2014



In contrast, startup ecosystems in other countries are rapidly increasing their share of exits, with the top 20 ecosystems outside of Silicon Valley having increased their share of the exit value pie by 14% over the last three years.[93]

[91] Start-up Nation: The Story of Israel's Economic Miracle, Dan Senor and Saul Singer

[92] It is of course desirable to have a large number of smaller exits ($10-100m), but these generally do not unlock capital or spawn a wave of new startups in the same way as a unicorn.

[93] Compass report 2015

Funded for **Good**

Google has awarded over $5 million across 10 innovative non-profits with big ideas for a better world, through the **Google Impact Challenge**

THE NATURE CONSERVANCY AUSTRALIA

Funding has been provided to help make fisheries sustainable with mobile technology that protects global fish stocks

THE GREAT BARRIER REEF FOUNDATION

Funding has been provided to help protect the Great Barrier Reef with a low-cost autonomous robot

HELLO SUNDAY MORNING

Funding has been provided to help overcome alcoholism with a personalised support smart-phone application

THE GEORGE INSTITUTE FOR GLOBAL HEALTH

Funding has been provided to help manage chronic diseases with a personalised sms support service

THE CENTRE FOR EYE RESEARCH AUSTRALIA

Funding has been provided to help bring eye testing to remote communities with an eyesight self assessment system

Google Impact Challenge

g.co/australiachallenge

// Startups as part of a modern Australian economy

The Australian economy is dominated by service-based businesses, constituting around 70% of GDP. Exports are heavily skewed towards the resources sector, with primary products such as minerals, metals and coal constituting 64% of all Australia's exports.[94]

According to Klaus Schwab, executive chairman of the World Economic Forum, *"The extent to which an economy can develop higher value-added products, processes and business models through innovation is a major determinant of long-term, sustained prosperity."*[95]

Schwab notes the importance of *"a strong scientific and technological base, investment from public and private sectors, links between businesses and research centers, a high-quality education system, political transparency, and a culture that encourages entrepreneurship and risk-taking."*

The economic complexity index (ECI) is a holistic measure of the production characteristics of countries. It was developed by economists at Harvard and MIT to explain an economic system as a whole and to identify the knowledge accumulated in a country's population and expressed in the country's industrial output.

The ECI is a measure of the degree to which a nation is able to produce a range of goods varying in complexity from extracting and selling unprocessed natural resources to building and selling complex industrial products. Research has shown that 73% of a nation's future wealth can be predicted from its ECI.[96]

[94] DFAT, 2011
[95] nytimes.com
[96] econnow.com

According to Harvard Economist Professor Ricardo Hausmann,[97] Australia has "an amazingly primitive export basket" which he predicts will lead to Australia becoming one of the worst performersin the region in terms of GDP growth.

Professor Hausmann's advice for the Australian economy is *"think of new areas of global activity where [we] can lead, have new products, new ideas and new industries that are going to be the sources of growth for the future."*

As can be seen in Figure 6, Australia's ECI has declined over the last 20 years to a value of 0.3 in 2014 (the latest year for which ECI has been calculated), ranking us 56th out of 144 countries and behind countries including Costa Rica, Kazakhstan, Argentina and Brazil.

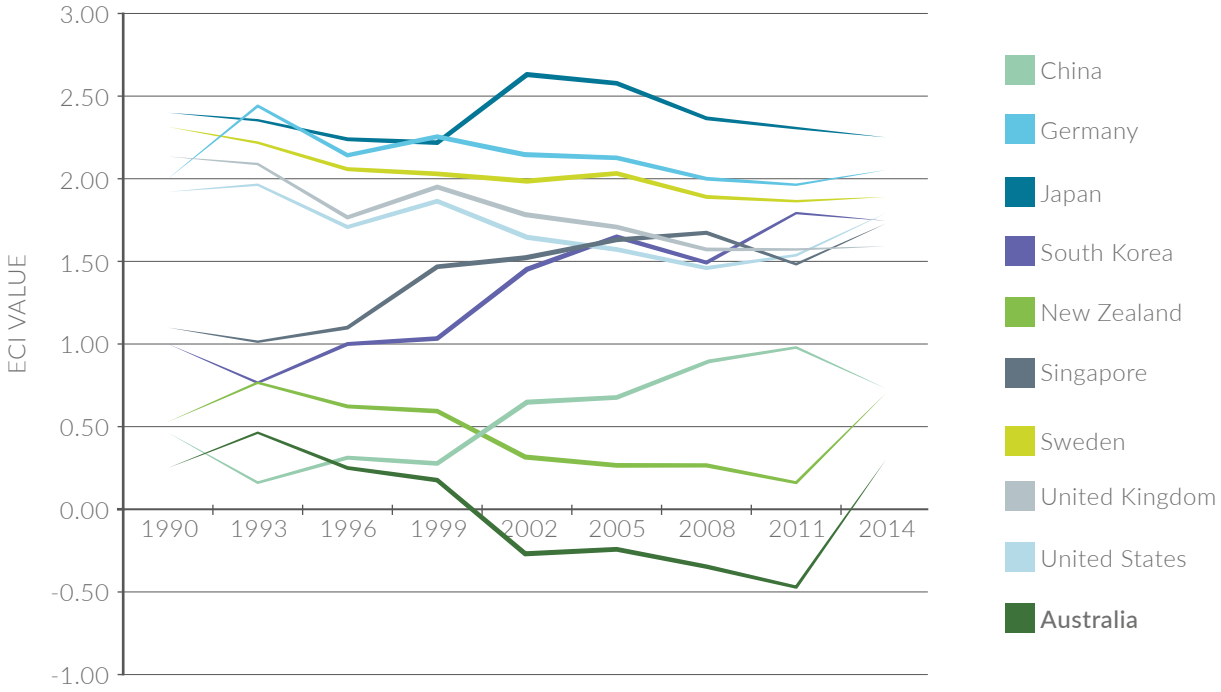


Figure 6: Economic Complexity Index - Australia vs selected countries[98]

[97] www.abc.net.au
[98] atlas.media.mit.edu

By way of comparison, Australia's economic complexity map (below) differs markedly from that of South Korea (ranked 6th by ECI).

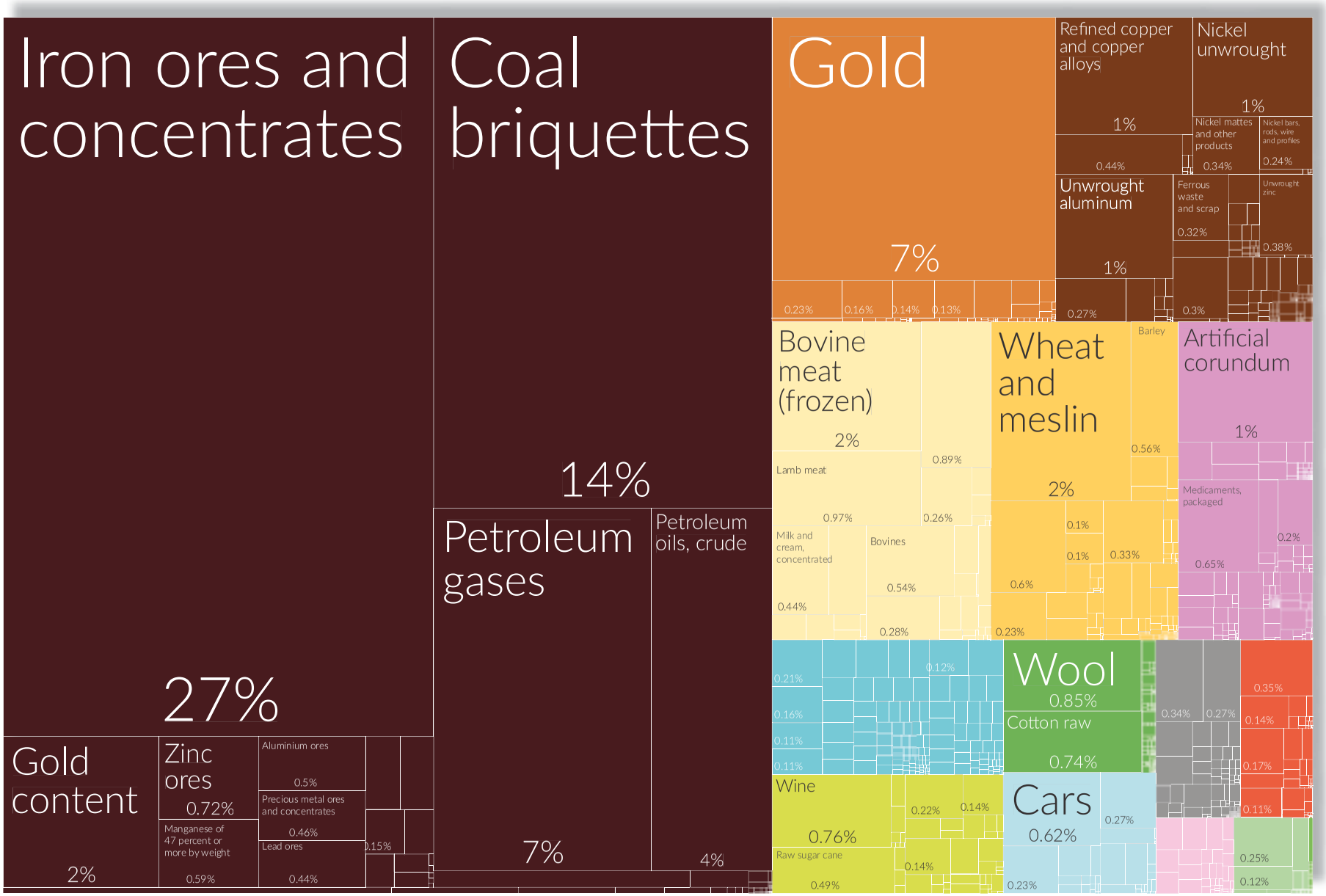


Figure 7: Economic Complexity Map for Australia (ranked 56th by ECI)[99]

[99] atlas.media.mit.edu

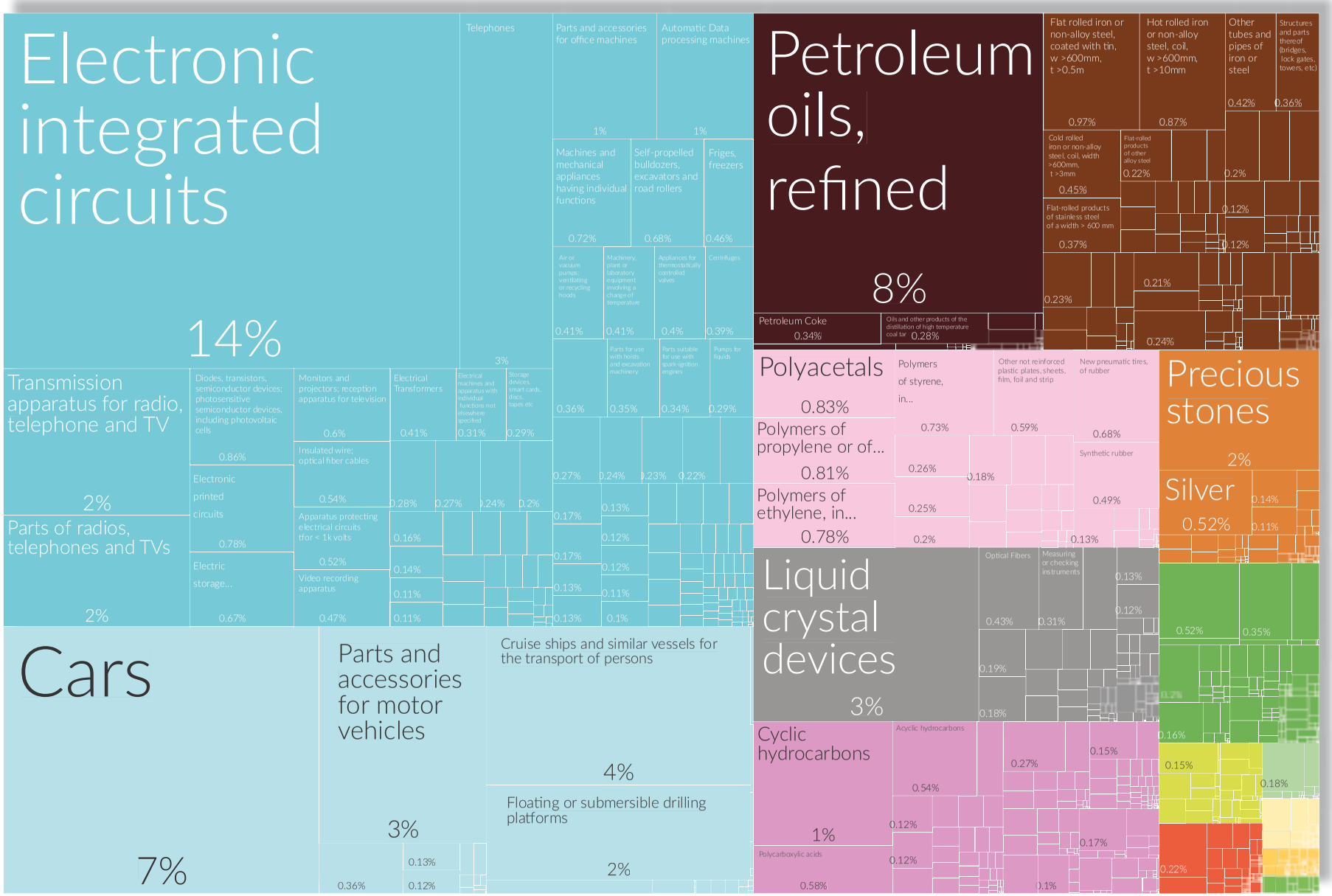


Figure 8: Economic Complexity Map for South Korea (ranked 6th by ECI)[100]

[100] atlas.media.mit.edu

// Startups as part of a modern Australian economy (cont)

It has long been recognised that Australia's economic dependence on its resources sector has hampered the development of other sectors. This phenomenon, named "Dutch Disease" by The Economist (after the collapse of Holland's manufacturing sector following the discovery of natural gas) is characterised by neglect and atrophy of high-value export industries whilst enjoying the benefits of exporting natural, unimproved (and finite) commodities which are exposed to price volatility.[101] Australia must shift away from being a derivative economy and instead create high labour productivity jobs that use our greatest asset, intellectual capital, to add value and increase national income. These jobs are less susceptible to being usurped by lower cost-of-labour locations, as has been seen in the case of car manufacturing, and at the same time to avoid the fate of resource-rich Argentina which has suffered massive economic downturn as a consequence of government failure to alter the composition of its economy. The latest Global Innovation Index shows that Australia has slipped from 17th place to 19th in its innovation outputs, and ranks very poorly (73rd globally) in innovation efficiency, a measure of the country's ability to generate economic outcomes from its innovation activities.

As noted by Australian businessman Andrew Liveris (Chairman and CEO of Dow Chemical Company),

"Australia needs a diversification strategy. We have the resources in the ground, but why should we allow ourselves to be the world's quarry?"[102]

[101] internationalspectator.com
[102] theaustralian.com.au

// The Australian 'Ideas Boom' needs a dose of chutzpah

Contributed by

Marc (Meir) Itzchak,
Principal of MIBD Strategy,
Previously Deputy Ambassador of Israel in Canberra

Much has been said about an Australian 'ideas boom' to guard against the declining mining extravaganza. The Turnbull Government is trying to put its money where its mouth is – a CSIRO Innovation Fund, National Collaborative Research Infrastructure Scheme, 'landing pads' in Silicon Valley and Tel Aviv. Even DFAT now houses an 'Innovation X-Change'. These are positive, and –let's be honest – overdue policy initiatives. But will they work?

Allow me a few observations as an outsider. As the former Deputy Ambassador of Israel in Canberra (but now an enthusiastic Aussie), I come from the country world-renowned for entrepreneurial innovation. If you want to read about the Israeli experience, I can highly recommend The Start-Up Nation by Senor and Singer. Did you know that drip-irrigation, cherry tomatoes, electric cars and disks-on-key are Israeli inventions?

Take Dr. Kira Radinsky – 29-year-old Israeli pioneering artificial intelligence-based predictive analytics solutions and transforming the way companies do business. Her startup was sold to Ebay for US$30 million. Israeli high-tech companies have generated nearly US$4 billion in the first half of 2016. In 2015, 61% of Israeli startups were sold to international investors.

So – can the Australian ideas boom deliver similar results for the Australian economy? Why is Australia, a G-20 member with world-leading research institutions, wealth and capital for investment, still not an innovation hub?

Here are a few observations on innovation to help answer these questions, focusing on the cultural, infrastructure and finances.

Innovation is a state of mind and requires a culture that allows for entrepreneurship. We were always surrounded by it and the world could have looked very different without it. Turnbull's 'ideas boom' is a misnomer – or tells only half the story. Ideas contribute nothing to the economy without entrepreneurship, and entrepreneurship requires a culture of risk. An embracing of failure. "If things are not failing, you are not innovating enough" – well said Elon Musk.

So why is Australia scared of risk? Convinced that failure is a disaster? Australia is blessed with natural resources, resulting in financial flows to low-risk investments with low return. The economy is driven by a sure-thing – tangible material in the ground with a return you can track (even with the commodity price variable). Australia believes that its export economies rule its economic situation - not Australia itself.

This seems to me to have created an Australia looking for a sure thing to invest in, unfamiliar with failure, and always looking at the external factors to justify its economic situation.

Australia has to change its thinking and start investing in high risk, high return. This applies to the Australian Government, financial institutions and everyday Australians. There has to be an acceptance that only a handful of startups will ever turn their 'idea' into a money-maker. Investing only in guaranteed winners will discourage innovators to take the next step. Accept the reality that the 'ideas boom' will involve investing in failures, budget for this, and watch the long-term, high returns.

Innovation needs infrastructure – institutional and regulatory. Yes, no 'ideas man' likes to think of these most bureaucracy of factors. But government (and the private sector and universities, though to a lesser extent) must build the environment for innovation. This must be done on the macro and the micro level.

Let's take the macro – we must improve internet speed in Australia. Akamai's State of the Internet report currently has Australia ranked 60th globally for connection speeds. The NBN will help. And with it comes the potential for Australia to collaborate with the world. Google currently employs over 1,200 people in Australia, half of them in R&D. Australia has an opportunity to attract many more global technology companies, just as Israel has become home to the R&D centers for innovation giants such as Intel, Apple and AOL.

A conducive environment for innovation goes beyond a grandly titled 'Department of Innovation'. The government must observe where ideas are sprouting and ensure there is an immediate link to commercialization opportunities. Of course, universities are the obvious hunting ground. But are Australian universities set up for this? Take Germany – the small Stuttgart Higher Institute for Technology has a dedicated 'business center' as part of its administration structure. Here, researchers can obtain free business advice, be matched with potential investors, and even receive no-interest business loans.

So, what about the funding? Some level of financial certainty is critical for startups. Government must support startups – and do so flexibly and with no penalties for failure. For many years, investment in innovation in Australia was between US$7-8 per capita. At the same time, Israel was investing around US$60 per capita. Why not dedicate a percentage of the budget to R&D, as Australia does for defense spending and has in the past done for aid? Why doesn't every government Department have a Chief Scientist and a Chief Economist?

Obviously tax concessions for startups in their first few years are important. These entrepreneurs start off by running a loss off their own capital. At least in the first few years, government should allow a different tax regime that would be conducive to innovation and not a deterrent.

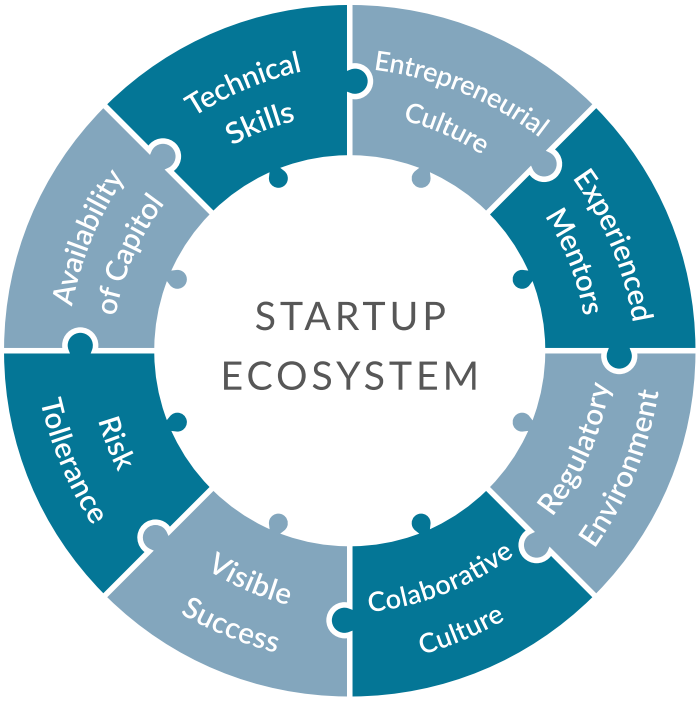
Australia has everything going for it – wealth, educated population and an over-abundance of ideas. But it has cultural, financial and institutional changes to make. My advice? Think big, think beyond a single political cycle, embrace failure, create links across the seas, know where ideas are being generated and nurture them. I'm looking forward to seeing Australia fly.

AN ACTION PLAN FOR AUSTRALIAN STARTUPS

// Conditions for a vibrant startup ecosystem in Australia

Global interest in supporting startups as a driver of economic growth is increasing. As a result, a number of influential books[103,104,105] have been written about the conditions that are required in order for startup ecosystems to flourish.

The general consensus is that successful startup ecosystems require the following 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 (in particular, computer programming)

The following section explores each of these conditions in detail, identifying Australia's current performance with reference to other countries, and proposing steps that can be taken to improve the conditions for Australian startups.

[103] Blue Sky Mining: Creating Australia's Next Billion Dollar Industries, Adrian Turner
[104] Startup Communities: Building an Entrepreneurial Ecosystem in Your City, Brad Feld
[105] The Rainforest: The Secret to Building the Next Silicon Valley, Victor Hwang and Greg Horowitt

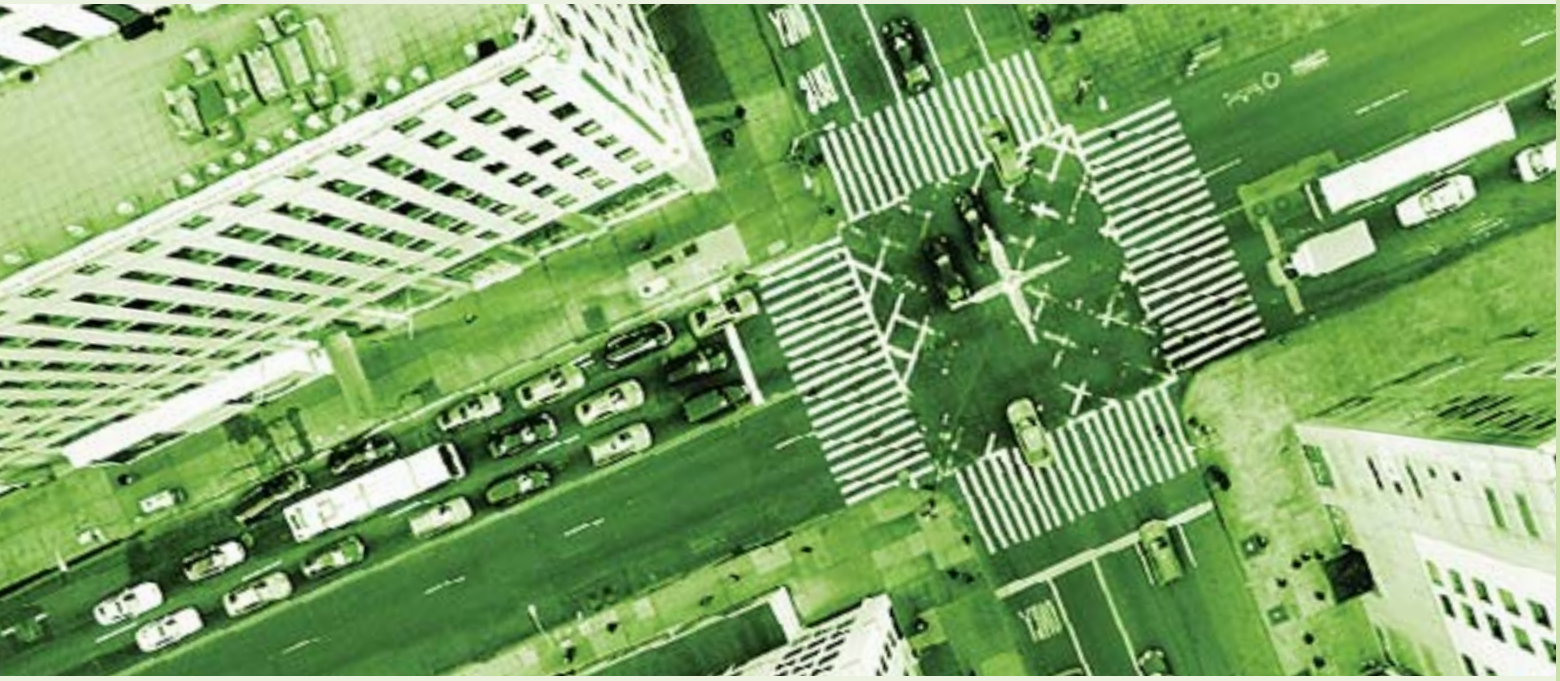
Despite positive developments over the last few years, Australia does not currently have all of the required conditions for a successful startup ecosystem. Their establishment has been hampered to varying degrees by market failures spanning education, culture, expertise, access to capital and regulatory environments.

This section makes recommendations to address those market failures. Many of the recommended 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.

The impact from some of the recommendations will be seen in the near term, although most will take several years to have a positive effect.

This report does not prescribe a division of responsibility between federal, State and local governments, although clearly the best outcomes will be achieved if high-growth startups and entrepreneurship become a national priority with strong public support, long term bipartisanship, and a close alignment between efforts at each level of government, and between States.

Throughout this report the following legend is used to indicate which areas recommendations are intended to address:



Theme 1

// Startup ecosystems need to be geographically concentrated

It is widely recognised that "startup density" is an important factor in growing successful startup ecosystems. Research by Richard Florida and others[106] highlights the importance of bringing entrepreneurs and people who support the startup ecosystem together. High startup density is achieved when startup founders and other participants in the ecosystem (investors, advisors, mentors etc) work in close proximity and benefit from frequent "collisions" which enable them to rapidly share learnings and build highly effective networks.

Startup co-working spaces and incubators are an effective means of artificially creating pockets of startup density. However, the small scale at which most of these operate means the cluster creates only limited value.

In contrast, ecosystems where high startup density is achieved across a larger geographic area have the ability to generate many collisions and add substantially more value. Silicon Valley is an extreme example, although more relevant examples include the startup clusters around Tech City in London, Silicon Sentier in Paris and Silicon Allee in Berlin.

Cities with mature startup ecosystems are often characterised by having one major hub of startup activity. Examples include the MaRS Discovery District, a 140,000m^2 innovation precinct in the centre of Toronto, and Tech City UK in London, which is now home to around 5,000 startups as well as many larger tech companies.

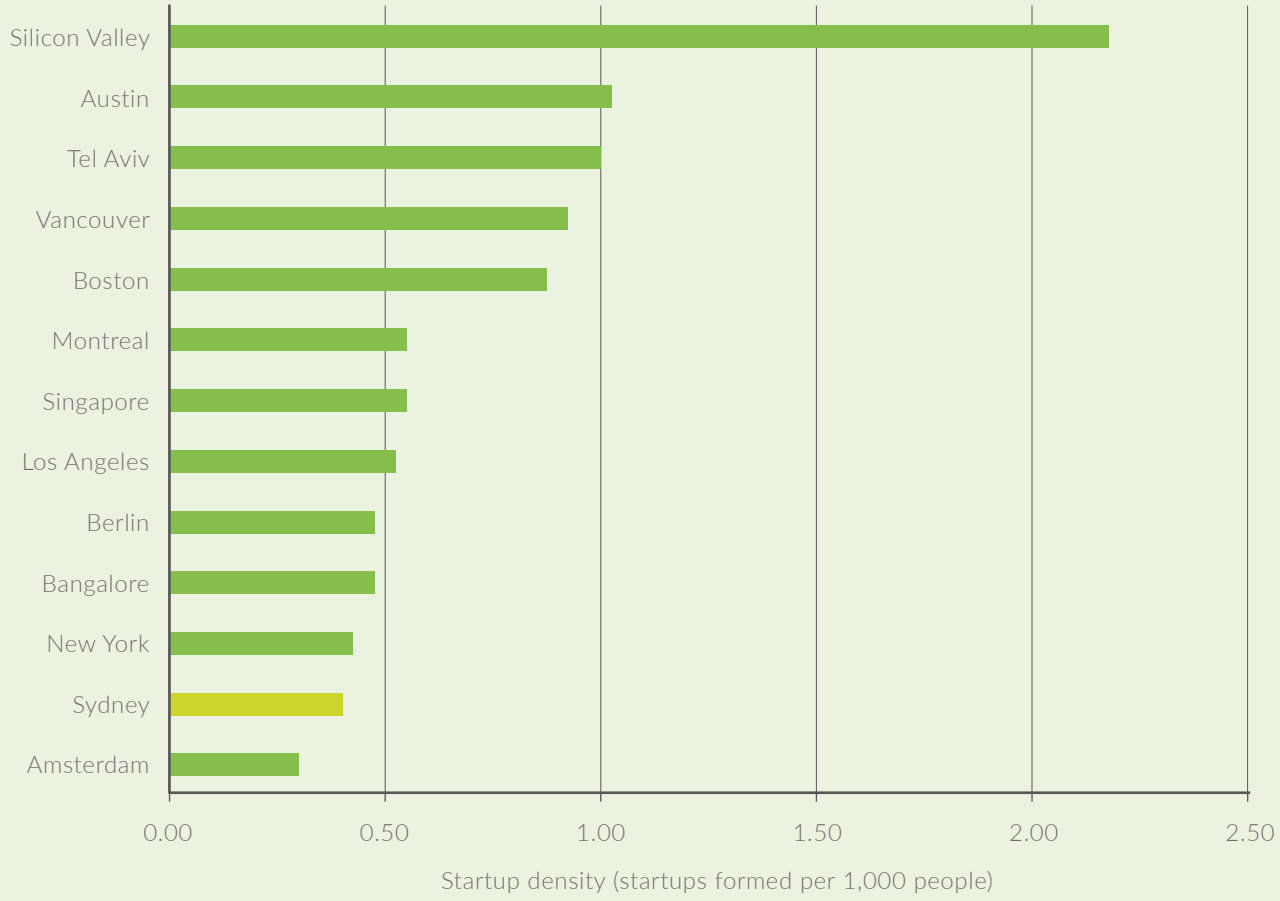
[106] boundlss.com

In contrast, some of the largest clusters of startup activity currently in Australia are ATP Innovations (a 6,500m^2 incubator space in Sydney housing approximately 60 startups) and Fishburners (a 1,200m^2 co-working space in Sydney housing around 175 startups).

In the 2015 Compass Global Startup Ecosystem Ranking[107], the Sydney startup ecosystem was ranked 16th in the world, albeit down four places since the previous ranking in 2012. Sydney has more startups than any other Australian city and has a more mature startup ecosystem than other Australian cities. It has spawned a number of successful technology companies including Atlassian, Campaign Monitor and Freelancer.

Nevertheless, according to Compass, Sydney's startup density is a mere 18% of that found in Silicon Valley, as measured by number of startups created per 1,000 people. It also lags other notable startup centres, including Tel Aviv, Berlin and Singapore, as well as less specialised cities such as Austin and Vancouver.

Figure 18: Startup density by city[108]



[107] blog.compass.co
[108] blog.compass.co

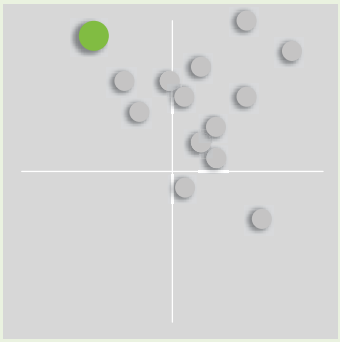
Sydney is not unique in having a geographically dispersed startup ecosystem. Currently all major Australian cities are suffering from a dilution of startup activity that is preventing startups from operating in a high startup density environment. Furthermore, there has so far been limited scope to co-locate startups with other ecosystem participants such as angel investors, VC funds, university students and service providers.

Innovation precincts have the potential to address fragmentation, acting as "centres of gravity" for each city's startup ecosystem and bringing together key players.

Leading work from the Brookings Institution[109] suggests innovation districts have become a key part of the new wave of city-based economic development by playing a number of important roles, including:

- Helping cities align economic development with disruptive forces in the economy and leverage their distinct economic position
- Empower entrepreneurs as a key vehicle for economic growth and job creation
- Growing better and more accessible jobs at a time of rising poverty and social inequality

[109] brookings.edu



// Recommendation 1

// Support the establishment of innovation districts in major cities

// ISSUE TO BE ADDRESSED

The programs that provide advice and mentoring to startups, including incubators, accelerators and co-working spaces, are geographically dispersed in Australian cities, and becoming more so as new programs are created.

This dispersion has a dilutive effect on the startup ecosystem, leading to fragmentation of programs and making it more difficult for startups to access the valuable but relatively rare expertise found in more mature startup ecosystems. It also leads to limited opportunities for interactions between startup founders, investors, mentors and executives in larger companies.

// RECOMMENDED ACTION

StartupAUS recommends that governments at all levels work with industry to establish a national network of innovation districts in major cities. These would act as a focal point for startup-related activities and events, address the current fragmentation of offerings, and provide valuable opportunities for collaboration between startups and larger technology companies.

There is no 'one size fits all' solution for creating viable innovation districts. Each city's needs will be different, and different models have worked well in different cities around the world, as we have highlighted in the 'international examples' section. In some cases, large physical spaces have been built or transformed into startup precincts. In others, incentives have been used to encourage startups, tech companies, and businesses that support them to cluster together in an area of the city.

The key here is to acknowledge the benefits of density, and move purposefully towards creating startup-dense areas in major cities to help capture the network effects on which successful ecosystems thrive.

// RATIONALE

Compared to startup hot-spots such as London, Berlin, San Francisco and New York, the startup ecosystems in Australian cities are at an early stage of development and operating at a relatively small scale – both in terms of the total number of startups and the involvement of larger tech companies.

Building a geographically concentrated startup community at significant scale in Australian cities would allow for development of a critical mass of companies, economies of scale, international visibility and attraction of international tech companies to co-locate with local startups.

Sharing learnings is one of the main avenues for founders to benefit from being part of a startup community. The larger and more diverse the cohort the more valuable it will become as a source of peer learning.

Unlike individual incubators or startup co-working spaces, innovation districts have the capacity to accommodate larger startups as their teams grow. These more mature companies have experience which is valuable to earlier stage companies. Having small and large startups co-located is therefore valuable to capturing the learnings of companies as they grow.

Currently there is no single startup hub in Australia that is recognisable internationally. Creation of large startup hubs could put multiple Australian cities on the map globally and would make a strong statement to the world about the importance Australia places on innovation and startups as an economic priority.

Innovation districts have also been shown to be an important factor in attracting large international tech companies. These companies are typically looking for opportunities to engage with large numbers of innovative startups as well as universities.

Finally, innovation districts could enable aspiring regional entrepreneurs to access training and mentoring programs delivered in major cities, and assist with the delivery of programs in regional areas via a hub-and-spoke model in which the hub provides services to support operators of startup programs in regional spokes

// INTERNATIONAL EXAMPLES

// UK

Tech City UK is a technology precinct located in the Shoreditch area of East London. Established by the UK Government in 2010, Tech City was based on an existing cluster of 15-20 technology companies around the Old Street Roundabout. The area has grown into a major European startup hub, with over 5,000 technology companies currently located in the area.

Tech City has attracted a number of large tech companies including a major Google campus which has become a focal point for the local startup community. Between 2011 and 2014 the number of technology jobs in London grew by 13% per annum, with technology sector revenues doubling over the same period. Approximately 328,000 people are now directly employed in technology jobs in London.[110]

British Prime Minister David Cameron launched Tech City in November 2010, saying *"As part of our strategy for growth, we've made a really important decision. We're not just going to back the big businesses of today, we're going to back the big businesses of tomorrow. We are firmly on the side of the high-growth, highly innovative companies of the future. [This is] our vision for East London Tech City."*

In December 2013, David Cameron announced continued support for Tech City, noting that he was *"determined to make the UK the best place in the world to start and grow a company". He added "Tech City serves not only as an example of how a city can be transformed into an engine for growth and innovation, but is also a blueprint for fostering growth that has been recognised globally".*

[110] Tech Nation Report 2016, www.techcityuk.com

// New Zealand

The New Zealand Government has committed to development of several major innovation precincts with the aim of supporting a growing knowledge economy in major cities. The first such precinct was GRID AKL, a 48,000m^2 facility being built on the waterfront in Auckland with funding from the New Zealand Government and City of Auckland. When completed, the precinct will house and support a wide range of technology-based businesses ranging from tech startups to international technology companies, venture capital firms and angel investors. The precinct will also act as a hub for entrepreneurship education to foster the next wave of Auckland's budding entrepreneurs.

The New Zealand Government has committed to building a similar 36,000m^2 innovation precinct in Christchurch.

// Toronto

The MaRS Discovery District is a 140,000m^2 science, innovation and entrepreneurship precinct in downtown Toronto with the stated aim to "help entrepreneurs launch and grow the innovative companies that are building our future — startup ventures with broad economic and societal impact."

The precinct is housed in two purpose-built towers and has been funded by the local, state and national governments, several large corporates and several individual benefactors.

"If there is one thing that Australia lacks right now in relation to its various startup hotspots, it is a spiritual home for the startup sector.

The challenge we face in the here and now is that there isn't a natural and affordable centre of gravity for startups to build their ventures. This is a major urban planning challenge and one that is only going to become more of an issue as the Innovation Boom takes hold.

In Sydney, the closest we come is Surry Hills or Ultimo, and in Melbourne, startups and co-working spaces are dotted around the CBD, South Melbourne and even out to Prahran. In London, Singapore, San Francisco and even New York you can "feel" when you've entered the city's spiritual startup centre simply by looking in the windows of coffee shops and seeing the entrepreneurs, engineers, designers and VC tapping away at their MacBooks."[111]

Jonathan Barouch, CEO – Local Measure

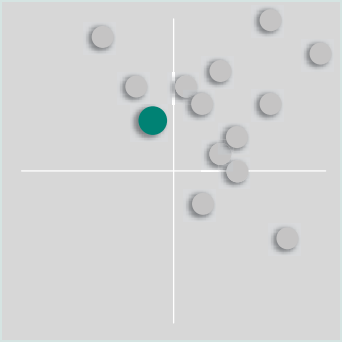
[111] www.afr.com

Theme 2

// Australia needs a coordinated innovation and entrepreneurship plan

The National Innovation and Science Agenda was the most significant foray yet by an Australian government into supporting innovation and entrepreneurship.

StartupAUS believes that the positive start made in the NISA should be followed by the creation of a national innovation agency and the implementation of a robust data collection exercise to ensure that innovation and startup-focused policies and programs are having the desired effect.



// Recommendation 2
// Create a national innovation agency

// ISSUE TO BE ADDRESSED

Notwithstanding the creation of Innovation and Science Australia as an advisory body, Australia would benefit from having a single agency with responsibility for oversight and delivery of innovation policy and programs.

As noted by Professor Roy Green, Dean of the Business School at University of Technology Sydney and advisor to the Senate Innovation System inquiry, the Australian Government's research and innovation spending is spread across 13 portfolio areas and 150 budget line items, leading to inefficient policymaking and uncertainty about whether funds are being allocated as coherently and effectively as possible.[112]

[112] theconversation.com

// RECOMMENDED ACTION

Australia would benefit from a dedicated agency with responsibility for development of a comprehensive national innovation and entrepreneurship policy, and for oversight and delivery of programs under this policy.

StartupAUS understands that Innovation and Science Australia is currently undertaking an audit of the Australian innovation system and intends commissioning an external report to formulate a long term strategic plan for the innovation system. StartupAUS endorses the canvassing of external inputs, but believes that the outsourcing of a strategic plan for the country's innovation system further highlights the need for a dedicated innovation agency.

The government requires first-rate data on which to base decisions and evaluate the effectiveness of policies and programs. An immediate priority for such an agency should therefore be to undertake a national data collection activity focused on the startup sector and to update the data on at least an annual basis.

// RATIONALE

Many developed economies have implemented overarching innovation agencies, including New Zealand (Callaghan Innovation)[113], the UK (Innovate UK)[114] Sweden (VINNOVA Governmental Agency for Innovation Systems)[115], Finland (Tekes), Netherlands (TNO), Ireland (Enterprise Ireland) and Singapore (Standards, Productivity and Innovation Board, SPRING)[116].

More detailed commentary on the need for a central innovation agency can be found at www.startupaus.org/resources/innovation-system-review-2014-startupaus/

[113] callaghaninnovation.govt.nz
[114] innovateuk.org
[115] vinnova.se
[116] spring.gov.sg

Theme 3

// Startups need capital to grow

A lack of risk capital for startups in Australia has, for some time, been one of the clearest market failures in the Australian startup ecosystem. Australia ranks significantly below many other developed countries in terms of deployment of risk capital despite having the world's fourth largest pool of superannuation funds under management at just over $2 trillion.[117]

A lack of risk capital has a direct impact not just on the success of startups but also on their rate of formation, since aspiring startup founders are acutely aware of the challenges associated with raising capital in Australia.

// Angel investment

Many Australian startups raise their first external funding round from angel investors, who are high net worth individuals investing their own money in funding rounds typically between $200,000 and $500,000.

An angel round often precedes a larger funding round led by venture capital funds, in which a fund manager invests funds placed by institutional investors such as superannuation funds, with funding rounds typically between $2 million and $10 million in Australia.

According to the Australian Association of Angel Investors (AAAI) there are 11 angel investor groups active in Australia whose members collectively invested an estimated $27 million in Australian startups in 2014.

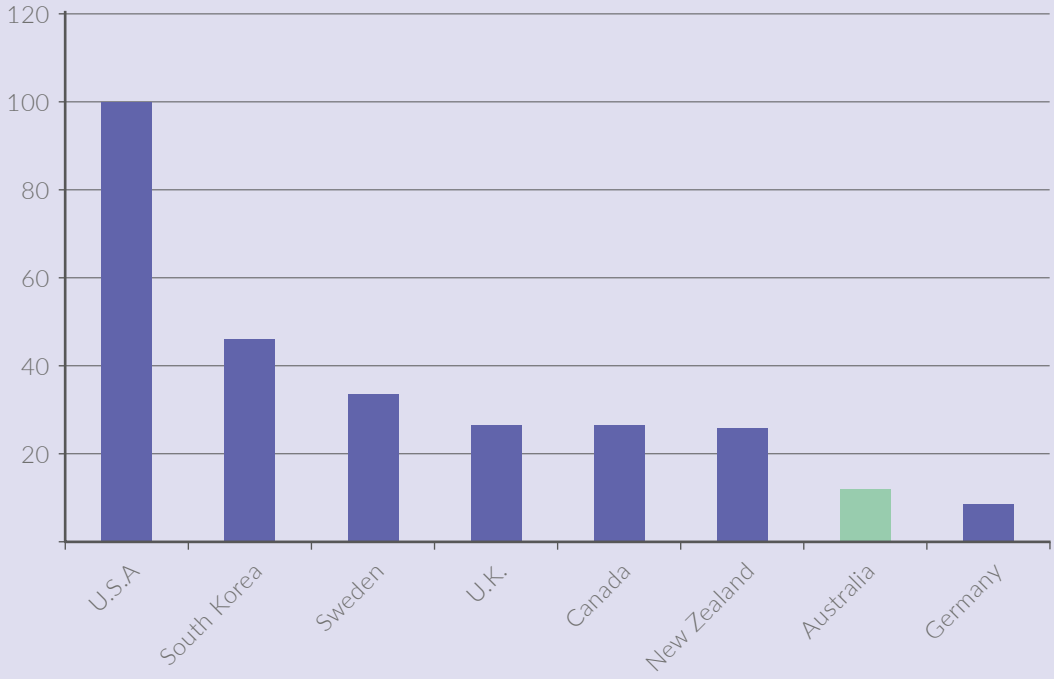
In Australia, like many other countries, a large proportion of angel investment is done outside of organised angel groups, with such "informal" angel investment typically representing around ten times the amount of "formal" angel investment in most countries. According to AAAI, around $275 million was invested in 2014 by all angel investors in Australia (including informally).

[117] www.theaustralian.com.au

In contrast, angel investors in the US commit around A$32 billion per annum in 60,000 investments.[118]

Despite the difficulties associated with accurately tracking informal angel investment and making comparisons between countries, it is instructive to compare the best available estimates of total angel dollars invested per capita of population, as shown in Figure 10.

Figure 10: Total angel investment per capita – selected countries, latest available data[119]



[118] unh.edu

[119] Sources: NACO, EBAN, HALO Report, besuccess, AAAI

On a per capita basis the US leads the world with angel investment of A$100 per capita, followed by South Korea (A$46), Sweden (A$33) and the UK, Canada and New Zealand (A$26). Despite strong growth in membership of Australian angel investor groups, angel investment in Australia is still a relatively small scale investment activity and will need to match growth in the number of startups if it is to continue to be a major source of funding for high growth startups.

Australia is not lacking wealthy individuals, with the country's wealthiest 207,000 people holding a combined $684 billion worth of assets.[120]

Notwithstanding Australia's relatively low rate of angel investment, it has been shown that angel investing can be a source of superior investor returns. A large scale study undertaken by the Kauffman Foundation and NESTA[121] found that angel investors in the US and UK generated an average return of 2.5 times the amount invested in a mean time of four years from investment to exit, equating to a very healthy 26% internal rate of return. The study incorporated data from 539 individual investors in 86 angel groups over a 15-year timeframe, and included 1,200 exits

Notably, the strong growth of angel investment in recent years in New Zealand, the UK and South Korea can be attributed in large part to the creation of co-investment funds and tax incentives for investors aimed specifically at simulating greater levels of angel investment. It was for this reason that StartupAUS recommended introducing a similar scheme here. Now that such a scheme is operational, we hope to see significant further growth in the angel investor space.

[120] smh.com.au
[121] techcrunch.com

// Venture capital investment

Despite positive developments in the last 12 months, Australia still has one of the lowest rates of VC investment into startups in the developed world.

In FY 2015 Australian venture capital funds invested $170 million across 80 seed, startup and other early stage deals (up from $100 million in 2014)[122]. This rate of venture capital activity places Australia 40th in the world in availability of venture capital according to the 2015 World Economic Forum Global Competitiveness Report (down from 19th in 2014).[123]

A more meaningful comparison can again be made on a per capita basis. As can be seen in Figure 11, total domestic VC investment in Australia (in companies at all stages, not just startups) is currently A$15 per capita per annum, compared to A$550 in Israel, A$240 in Singapore, A$239 in the United States and A$74 in the UK.

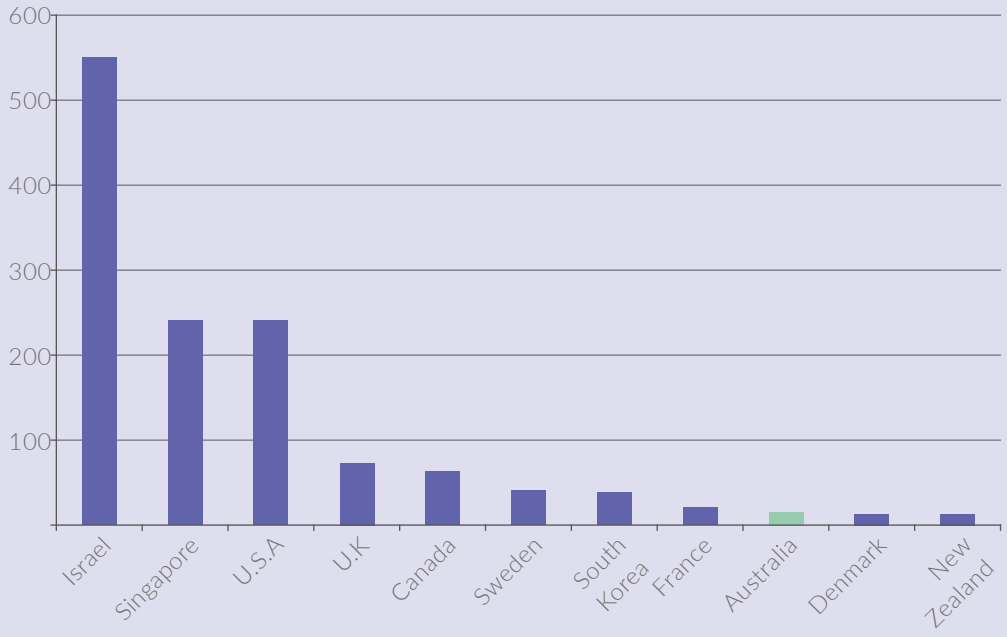


Figure 11: Domestic VC investment per capita – selected countries, latest available figures[124]

AVCAL's 2013 report, 'The Economic Impact of VC in Australia', found that VC-backed companies innovate at a much greater rate than other companies. VC-backed firms are also responsible for 10% of all business R&D expenditure in Australia, spending on average 200 times more on R&D per employee than other businesses, and VC-backed companies are IPO-ready in half the time needed by non-VC-backed companies.

[122] AVCAL 2014 and 2015 Yearbooks

[123] reports.weforum.org

[124] Sources: The Economist, Reuters, AVCAL, US National Venture Capital Association, European Private Equity and Venture Capital Association, Israel Venture Capital Research Centre, NZVCA, UN, Ernst & Young, Geektime

Despite the enormous potential of venture capital to boost the growth of technology companies, by May 2013 only around 500 Australian companies had ever received venture capital funding, in aggregate generating only 0.01% of GDP.[125,126]

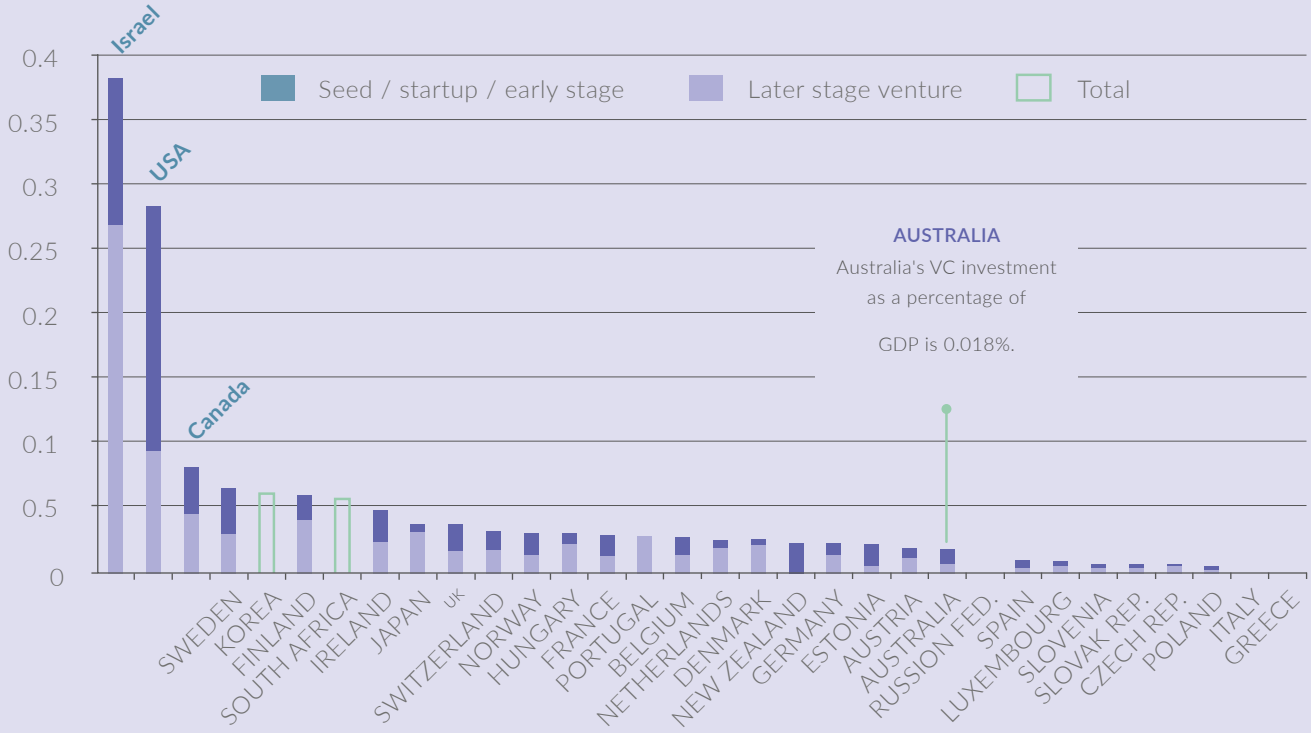


Figure 20: venture capital investments as a percentage of GDP Percentage, 2014 or latest available year

In contrast, in the United States more than 24,000 companies had received venture capital funding, accounting for 21% of GDP ($3.1 trillion in revenues) and 11% of private sector employment (12 million jobs).[127] In Israel, 70% of economic growth has been attributed to high-growth, venture capital-backed technology companies.[128] The US and Israel are 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.

Australian startups that are ready to scale (ie. those that have a product and business model that is ready for global expansion) struggle to raise venture capital from Australian funds. There has historically been a significant lack of available venture capital funding for companies seeking to raise more than around A$20 million. Over the last five years, only 19% of Australian venture capital-backed companies received expansion stage funding, compared to 45% in Europe and 46% in the US. With substantially more funds now available for deployment in VC funds in Australia, we may begin to see a shift towards larger funding rounds being led by Australian VC firms.

[125] cch.practicesource.com
[126] avcal.com.au
[127] nvca.org
[128] city-journal.org

// The disconnect between superannuation funds and the venture capital industry

Australia has the world's fourth largest pool of superannuation funds at $2 trillion. However, only 0.011% of our superannuation funds are invested in local venture capital. In contrast, US pension funds commit around 2% of funds under management to this asset class, representing a 180 times multiple relative to Australia.

Currently only a small handful of Australian superannuation funds are investors in Australia's domestic venture capital industry. Notably, First State Super invested $120m in Blackbird VC's most recent fund (out of a total $200m), and AirTree Ventures' recent $250m fund includes two (undisclosed) superannuation players. One notable development here has been the recent creation of a tech-focussed superannuation fund, Spaceship. The thesis of the fund is that 'technology has been the key differentiator and enabler for businesses over the last three decades and will continue to be going forward. Our super should be invested in where the world is going, not where it's been.' The fund is yet to formally launch but has attracted high-profile support from Australia's tech startup community.

Despite these limited examples the disconnect between venture capital and superannuation remains highly conspicuous. It begs the question: How can the government facilitate greater engagement of the superannuation industry in supporting Australian innovation, as occurs in almost every other developed economy?

A failure to foster and support a vibrant venture capital industry in Australia would all but ensure that Australian tech companies are forced to continue to relocate in order to access growth capital. This would have dire consequences for the Australian economy, allowing the lion's share of the economic benefit of our most successful tech companies to flow to other countries at the expense of the Australian economy.

// A perspective on venture capital in Australia

Contributed by

Yasser El-Ansary,
Chief Executive, Australian Private Equity & Venture Capital Association Limited

The Australian early stage ecosystem is rapidly evolving bolstered by growing confidence, more experienced entrepreneurs and the Federal Government's National Innovation and Science Agenda (NISA) – a set of policy measures aimed at supporting the nation's transition to a knowledge-based economy.

While innovation and entrepreneurship will always be driven by individuals, the NISA has helped create an enabling environment for Australian startups to grow and mature within. These reforms mean Australians are now being provided with incentives to back promising ideas, and through that, change our traditionally conservative and sometimes risk-averse mindset. Over time, the NISA could be transformative for the sector.

Venture capital is playing an important role in the exceptional growth of the Australian early stage ecosystem, providing founders with both capital and expertise to commercialise their ideas and grow their businesses. During FY2014 to FY2016 alone, $800m was invested by venture capital funds in Australian businesses, focused on the life sciences, ICT and consumer products/services sectors.

This wave of investment looks set to continue over the coming years, with some of the nation's largest domestic super funds (such as Australian Super, HESTA, Hostplus, Statewide Super and First State Super) increasingly looking at venture capital as a way of generating strong returns for their members, and corporate venture funds like Telstra Ventures and NAB Ventures more active in this space.

In FY2016, a record $568m was raised by domestic venture capital funds for deployment into Australian startups and other high growth companies. Remarkably, this is 73% higher than the amount raised by funds in FY2015, and over three times the FY2014 total.

This boost in fundraising has partly been driven by improved venture capital returns in recent years – the product of a maturing market, and an increasingly sophisticated set of investors and fund managers.

Pleasingly, there are now hundreds of great VC-backed success stories across key sectors of our economy. Just one example of what can be achieved is Australian fashion-tech startup, Shoes of Prey.

In a world first, the company allows shoppers to design custom-made women's shoes, and in 2012 received funding from a syndicate that included Southern Cross Venture Partners. Besides capital, Southern Cross was able to help Shoes of Prey improve its corporate governance, focus on its mass customisation business model, and provide access to networks to enable further fundraising as the business grew. In 2014, Shoes of Prey raised an additional US$5.5m from US-based Khosla Ventures, as well as Blackbird Ventures and Southern Cross. Today, the company has five offices globally, almost 200 staff, and has helped shoppers design six million shoes – a remarkable achievement in the space of just a few short years.

While this is a clear success story, there are policy blind spots which are holding back other promising businesses from realising their potential. In particular, the next phase of Australia's innovation reforms must focus on supporting 'scale-ups': those businesses that have graduated from the initial startup phase with a proven product and market opportunity which now need further capital (often around $5m to $20m) and expertise to hire staff, drive sales and invest more in R&D.

Currently, a lack of institutional funding at this vital stage pushes companies offshore. Making sure that these scale-ups receive support has economy-wide implications, including for Australia's ability to drive future productivity and employment growth. Often a condition of offshore VC funding is that business relocate overseas so that they can access larger markets and be in closer proximity to the offshore VC investor. Going global is absolutely key to the success of most Australian businesses today – but we can improve our capacity to keep high growth VC-backed businesses based here in Australia for longer, and encourage them to maintain a strong local presence.

Over the last five financial years (FY11-15), only 19% of Australian venture-capital backed companies received later/expansion stage funding, down from 30% of companies in FY06-11. This can be contrasted with Europe and the US where 45% and 46% respectively of all VC deals take place in that stage.

So why does this matter? The answer is that scale-ups lie at the heart of future employment growth, and Australia's ability to successfully transition to a new knowledge-based economy.

Department of Industry, Innovation and Science research shows that despite the Global Financial Crisis, over the period 2006-11, the largest contribution to job creation in Australia (some 40%) came from 'young SMEs': firms aged 0-5 years that had less than 200 employees and accounted for 15% of total employment. These companies created 1.12million net FTE jobs in that period.

While there are some Australians who are worried about the personal labour-market implications of digital disruption, the best way to demonstrate how valuable the forces of disruption can be is to support those companies that can create highly skilled jobs which generate new opportunities for workers across all industry sectors.

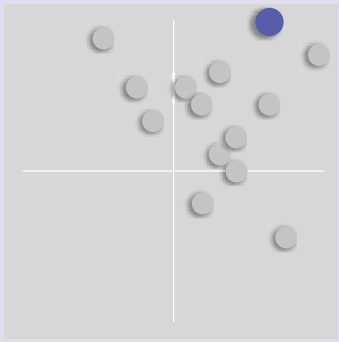
In November 2015, research from Stanford University and the University of British Columbia highlighted the economic contribution of venture capital in the US, particularly in financing innovative companies. In 2014, VC-backed companies accounted for 44% of the total R&D spending of US public companies, despite only representing 17% of them by number, and 21% by market capitalisation.

Three of the five largest US public companies by market capitalisation – Apple, Google, and Microsoft – all received most of their early external financing from VC. The employment dividend of such investment is clear: since 1974, one quarter of net job growth for publicly listed US corporations came from VC-backed companies.

There is every reason to expect that Australia can achieve similar outcomes in the context of our own economy.

In a globally competitive environment, there is currently a window of opportunity to develop a world-class startup and scale-up ecosystem, on the doorstep of the world's largest market in Asia. Without further reform, Australia risks being left behind, allowing the jobs of the future to be concentrated in cities like Singapore, Bangalore, Hong Kong and Kuala Lumpur.

It has been pleasing to see the spirit of bipartisan support that innovation policy has attracted in recent times, and this needs to continue if we are to harness Australia's enormous potential. The next wave of policy reform must now focus on helping Australian scale-ups compete on the world-stage – we know exactly what needs to be done, we just have to start doing it now.



// Recommendation 3
// Improve the R&D Tax Incentive to make it more favourable to startups

// ISSUE TO BE ADDRESSED

Currently the R&D Tax Incentive is the Federal Government's largest innovation-focused program, delivering $3 billion annually to encourage companies of all types to engage in R&D. Given that startups find it difficult to access funding for growth, the incentive is widely viewed as a vital source of funding for startups. In a recent StartupAUS poll, 89.2% of founders said the program was either 'critical' or 'very important' for their business.

However, the refund is payable annually following the end of the income year via an offset through the company's income tax return, and there can be long and unpredictable delays between making a claim and receiving the funds. This can have serious cashflow implications for startups, since they cannot commit the funds to operational expenses until they have received them. Startups by their nature are particularly vulnerable to the costs associated with delaying growth. StartupAUS is aware of a significant number of startups that have therefore found it necessary to obtain costly debt financing to cover operational expenses while they wait for the R&D refund to be paid. In a recent survey conducted by StartupAUS, 87.8% of founders said receiving R&D Tax Incentive payments quarterly rather than annually would be either 'extremely' or 'very' beneficial for their business.

CAPITAL

TALENT

The R&D Tax Incentive is one of the single most attractive incentives to build a company in Australia.

Each and every time we consider the geography of operations for Jemsoft, this scheme is one of the major incentives helping us decide to keep the vast majority of our expenditure in human resources onshore.

Introducing a quarterly payment system, assuming it didn't create a proportional increase in the amount of work required to lodge a project claim, would be phenomenal for early stage, and later stage bootstrapped companies like ours, in aiding in the management of cashflow and the maximisation of return to the Australian economy.

Jordan Green
CEO – Jemsoft

// RECOMMENDED ACTION

StartupAUS recommends that the Federal Government increase the R&D Tax Incentive for tech startups, increasing the refundable tax offset from 43.5% to 90% for a select group of eligible companies with an aggregated turnover of less than $20 million. This increase could be limited to technology companies which meet the definition of an early-stage innovation company (ESIC) under the angel investor incentives framework. Optionally the government could further limit this increase to the first $2m claimed under the R&D Tax Incentive by each eligible company, helping to limit the cost implications of this proposal. KPMG modelling commissioned by StartupAUS suggests such an increase, properly limited, would cost about $90m.

Further, StartupAUS recommends that the government introduce quarterly payment of the R&D incentive for early-stage startups to more closely align the timing of the refundable tax offset with business needs.

The government has recently made public a review of the R&D Tax Incentive conducted by an independent panel. As part of the consultation process surrounding the review, StartupAUS has submitted a detailed outline of the above recommendation and supporting evidence. The panel's recommendations are not government policy, and the government has said it will respond in Q1 2017 after a final round of consultations. StartupAUS's submissions to the process can be found here:

www.startupaus.org/resources/rd-tax-incentives-submissions

// RATIONALE

Increasing the quantum of the R&D Tax Incentive and making payments quarterly would greatly assist startups with much-needed growth capital, and alleviate cash flow difficulties associated with timing of payments. It would also increase the probability of success for startups by increasing the speed with which they can get their products and services to market, and accelerating the creation of high value jobs in Australia.

The ability of a company to receive a short-term refund of eligible R&D expenditure may encourage more companies to invest in R&D, and may also encourage greater levels of external investment in startups. In 2011 the government announced its intention to introduce quarterly credits for companies with turnover of less than $20 million. Although the 2011 proposal was not implemented, the government's consultation paper at the time noted that R&D quarterly credits would allow entrepreneurs to access benefits sooner, improving their cash flow and providing a greater incentive to invest in R&D.

StartupAUS is a strong supporter of the R&D Tax Incentive. It is, and will continue to be, a critical component in Australia's burgeoning innovation sector. StartupAUS has made two submissions to ISA's review of the incentive, noting startups reinvest the greatest proportion of the R&D Tax Incentive refunds they receive into further R&D activities. In a survey conducted by StartupAUS in support of those submissions, 82.4% of startup founders said they would reinvest any additional R&D tax Incentive by hiring 'more staff doing product-related research and development'.

StartupAUS recognises that there are cost pressures on the federal budget, but research and development is a critical part of the innovation system, and should be seen as an investment rather than a cost. There is room to increase overall R&D spend - Australia currently punches below its weight by comparison to marker countries. We spend just over two per cent of GDP on R&D, putting us 14th in the world, while global leaders like Israel and South Korea spend around four percent[129]. To be in the top 10 in the world on this measure we would need to increase spending on R&D by about 30%, taking total spending to around 2.85% of GDP.

Support for increasing the R&D Tax Incentive for startups is not limited to the sector itself. In April 2015 Maile Carnegie (then Managing Director of Google Australia), said the government would be better served directing the R&D Tax Incentive at startups, since large technology companies such as Google will continue to invest in R&D regardless of incentives.[130]

[129] data.worldbank.org
[130] smh.com.au

Theme 4

// Startups need access to world-class expertise

For Australian startups to succeed they need access to the best guidance possible. They also need to be able to recruit world-class talent as they grow.

The best people to advise first-time entrepreneurs are those who have first-hand experience in starting, growing and exiting a startup at least once before. As noted by Paul Graham, founder of Y Combinator, the world's most successful startup accelerator, *"Startups beget startups. People who work for startups start their own. People who get rich from startups fund new ones. I suspect this kind of organic growth is the only way to produce a startup hub, because it's the only way to grow the expertise you need."*[131]

Analysis of Australia's most successful tech startups conducted by StartupAUS in conjunction with UTS identified that 82% of those highly-successful businesses were created by founders who had created at least one previous company.

Unfortunately the current lack of experienced startup entrepreneurs in Australia is a chicken-and-egg problem that is limiting growth in the sector. 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. However we will only have a cohort of such skills when we have grown the tech startup sector to a point where it spawns successful exits that enable successful entrepreneurs to be recycled back into the ecosystem. As noted earlier, the creation of unicorns has been a major factor in developing this capability in other countries.

We have a small cadre of entrepreneurs in Australia with global experience. Those individuals are in huge demand and generally give their time extremely generously. However, most incubator and accelerator programs in Australia are lacking this sort of expertise and are therefore limited in the quality and quantity of support they can provide to entrepreneurs.

A number of accelerator programs have sought to address the lack of local startup expertise by basing their mentoring programs largely on experienced entrepreneurs from outside Australia – either by flying them in or by taking the entire cohort of startups to locations such as Silicon Valley and New York.

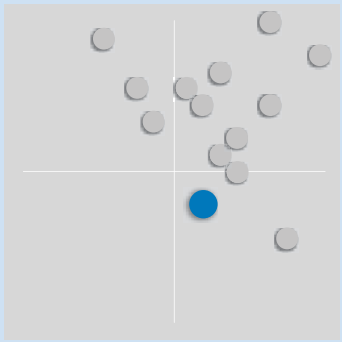
[131] paulgraham.com

Other such programs include the Visiting Entrepreneurs program delivered by Brisbane's economic development agency Brisbane Marketing[132], and programs run by Curtin University (engaged Bill Tai, a successful Silicon Valley entrepreneur and investor, as a visiting Innovator In Residence) and University of South Australia's Centre for Business Growth (regularly invites visiting growth entrepreneurs to deliver clinics, teach CEOs, give public lectures and teach students).

Microsoft Australia has taken a different approach, partnering with both Federal and State governments to help startups gain access to international expertise through the MassChallenge program. MassChallenge is a not for profit accelerator program that was born in Boston and has expanded globally. It takes no equity in the startups it supports and it runs four month intensive programs where startups compete for cash prizes. Other international accelerators have also taken an interest in Australia, including Startupbootcamp, a partner organisation of Cisco, which announced a partnership with the Victorian Government to begin operating in Melbourne from 2017.

Despite these efforts, the problem remains real. Sydney and Melbourne's startup ecosystems have developed more than any other Australian city, but would still benefit from the injection of outside expertise. All other capital cities are significantly below critical mass of startup expertise, and artificially introducing startup expertise for a period of time would greatly increase the speed at which those ecosystems develop.

[132] startupsmart.com.au



// Recommendation 4

// Implement a national Entrepreneurs-In-Residence program

// ISSUE TO BE ADDRESSED

Australia faces a chicken-and-egg problem with regard to successful entrepreneurs advising new startup founders, and it will take some time to organically build up a large cadre of experienced entrepreneurs who can cycle back into the startup ecosystem to guide new entrepreneurs.

Similarly, many Australian angel and venture capital investors lack the experience found in their counterparts in countries with more mature ecosystems.

// RECOMMENDED ACTION

StartupAUS recommends that the government create a prestigious national Entrepreneurs-In-Residence program through which a series of experienced entrepreneurs, angel / VC investors and startup advisors can be brought to Australia for periods of time to work with all parts of the startup ecosystem to accelerate its maturation. Entrepreneurs-In-Residence should be remunerated at a level that makes it attractive for successful entrepreneurs to move to Australia to take up the positions.

The role of the EIRs would be to:

- Provide coaching and mentoring to entrepreneurs.
- Advise incubators, accelerators and other parts of the startup ecosystem to ensure they are operating in line with international best practice.
- Work with angel investment groups to help them grow and professionalise their activities and to improve the profile of angel investing and attract more investors.
- Evangelise entrepreneurship as a career path by engaging with university students and the wider community.

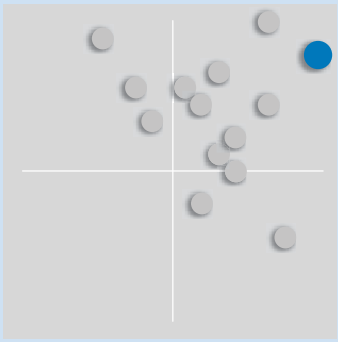
These positions could be housed within innovation districts as outlined in Recommendation 1, and focused on actively engaging with entrepreneurs and supporting the creation and growth of startups.

// RATIONALE

The pool of experienced entrepreneurs in Australia will continue to grow organically over time. However, if Australia is to accelerate the growth of its startup sector it will be necessary to introduce some of this expertise in the short to medium term.

With suitable reward and recognition, the government would be able to attract high-calibre individuals (including Australian ex-pats) who would have a positive effect on the Australian startup ecosystem by helping first-time startup founders to short-circuit the learning curve and by facilitating access to their global networks.

Such a program would serve to extend the handful of existing (but mainly small scale) initiatives underway and encourage the growth of high-quality startup ecosystems across the country.



// Recommendation 5

// Make targeted amendments to legislation affecting Employee Share Schemes

The long-awaited changes to Employee Share Schemes (ESS) in Australia were well received by the startup community when they were announced in 2015, and substantially achieved the policy outcomes desired. However, under the current arrangements there are two fundamental issues that require attention in order for Employee Share Schemes regime to achieve its full potential.

Fortunately both issues can be addressed through simple legislative changes that will remove the remaining bugs in what is otherwise a world-class system.

// Issue 1: Amend the Employee Share Scheme 20/12 rule

// ISSUE TO BE ADDRESSED

Employees issued with shares under an ESS are characterised as "investors", potentially causing the company to fall foul of the investor ceiling and triggering a requirement to publish its audited financials.

The Corporations Act prohibits companies from issuing securities without a disclosure document (such as a prospectus) unless the company falls within one of the exemptions to the disclosure regime (the safe harbour exemptions). The exemption that has practical application to startups is the small scale offering exemption, which provides for offers to no more than 20 investors in a 12 month period (the "20/12 rule"), raising no more than $2 million.

Where a fast-growing startup is seeking both to raise capital (by issuing equity) and to use ESS as a recruitment incentive, it can easily fall foul of the investor ceiling and would be subject to the burdensome requirement to publish its audited financials.

This substantially limits the usefulness of the ESS regime for many of Australia's most promising startups, particularly those that are growing their workforce rapidly.

// RECOMMENDED ACTION

StartupAUS recommends a simple change to the legislative framework so that employees are not considered "investors" for the purpose of this rule. This would enable Australia's new ESS regime to be truly effective in supporting Australia's most promising startups.

// RATIONALE

The barrier in place to issuing options/shares to staff in a high growth business is the limited application of subsection 3 of section 708 of the Corporations Act 2001. This presents two significant disadvantages which have a high probability of large impact on a startup:

1. Public availability of commercially confidential disclosure documents including prospectuses, short form prospectuses, profile statements and offer information statements including an audited 12 month financial report, and corresponding ability of competitors to gain access to such financial information.
2. Cost of preparing these disclosure documents and an audited 12 month financial report. Many startups have not prepared, and have not had the need to prepare disclosure documents and audited financial information – the cost of which for an early stage company would be prohibitive.

With some targeted changes to the legislation, Australia could have a world-leading ESS regime which empowers startups to recruit and retain the world's best talent. Making the recommended changes would remove the most significant remaining regulatory impediment to Australian startups issuing share options to employees.

A detailed recommendation on this topic was made in a StartupAUS policy submission to the government in November 2015. It is available on our website.[133]

[133] startupaus.org

// Issue 2: Amend eligibility requirements for Employee Share Scheme tax changes

// ISSUE TO BE ADDRESSED

Changes to the tax treatment of Employee Share Schemes (ESS) in 2015 introduced a "startup" concession aimed at resolving the bizarre situation that existed since 2009 in which options were taxed in the hands of the employee at the time of issue, rather than at the time they received the proceeds.

The startup concession is available to companies that (a) are not listed on a stock exchange (b) have been incorporated less than 10 years, (c) have aggregated turnover of less than $50 million and (d) are a resident Australian taxpayer.

Whilst the startup concession is favourable to early stage startups, the legislation is significantly less advantageous to more mature technology companies. These companies must still operate under the ESS rules introduced in 2009. Given the increasing reliance on the ASX as a means of raising growth capital, StartupAUS is concerned that the exclusion of listed companies will negatively impact on the ability of these companies to attract and retain the best talent. The $50m turnover limit is also too low for many of Australia's most promising tech startups. Ironically, under the current regime, a company's rapid growth may be both the reason its new employees are interested in the company's employee share options plan, and the reason they might not be able to partake in it.

// RECOMMENDED ACTION

StartupAUS recommends that the government amend the startup concession to ensure its applicability to all Australian tech companies.

// RATIONALE

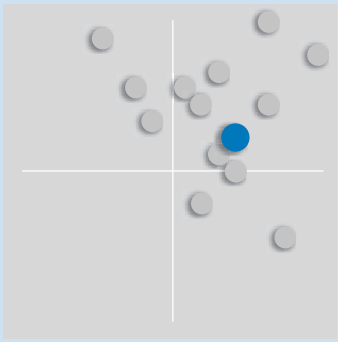
Australian technology companies in the scale-up stage are competing for talent with global tech companies such as Google and Facebook, and to require them to compete on anything other than a level playing field represents a major handbrake on their growth.

Recruiting experienced executives from overseas is a valuable strategy for Australian tech companies at the scale-up stage. However many of these companies are above the $50 million turnover threshold and are therefore at a global disadvantage in their efforts to recruit and retain the best people.

Excluding companies with a turnover of more than $50 million is also likely to disadvantage companies operating marketplaces or online payments businesses in which turnover of $50 million may translate to annual revenues of less than $5 million.

The ASX has been increasingly seen as a viable path for Australian startups to raise modest amounts of capital, and excluding listed companies has the effect of preventing many early and mid-stage technology companies from accessing the amended ESS rules.

Excluding companies that are more than ten years old similarly disadvantages companies that are no longer early stage startups. Even companies that are under ten years old could be excluded from the concession if they acquire another company that is more than ten years old, since the test applies to all companies in a group.



// Recommendation 6

// Implement and improve the Entrepreneur Visa

// ISSUE TO BE ADDRESSED

The Australian startup ecosystem is relatively immature and does not have the same depth of entrepreneurial experience as overseas ecosystems.

A lack of experienced entrepreneurs means that many first-time startup founders are learning by trial and error, or receiving guidance from others with only slightly more experience than they have.

In the National Innovation and Science Agenda the government announced plans to create a new Entrepreneur Visa to attract the best and brightest entrepreneurial talent and skills to Australia. The visa has now been announced, but to be effective it will need continued enhancement and concerted, widespread publicity.

// RECOMMENDED ACTION

StartupAUS welcomes introduction of the new subclass of the Business Innovation and Investment (Provisional) Visa (subclass 188) but notes it is unlikely to be effective unless it is enhanced, simplified, and advertised widely. To be competitive against similar visas on offer elsewhere, an Australian Entrepreneur visa needs to be:

- Easy for high quality applicants to obtain
- Easy to apply for
- Quick to process
- Simple
- Well advertised

The current visa does not yet meet many of these criteria.

// Recommendation 6 (cont)

In advocating for such a visa in the past, StartupAUS has recommended that the eligibility criteria focus on entrepreneurial experience rather than capital raised. An experienced entrepreneur who has had previous successes will be highly valuable in the Australian startup ecosystem regardless of whether they have already received funding for their current startup. Conversely, an inexperienced entrepreneur is likely to add much less value, even if they have raised capital.

The current program does not focus on experience: the primary requirement is that the applicant must have raised at least $200,000 from an approved Australian funding source. The list of funding sources discounts angel investment, leaving potential applicants with very few potential sources of funding given most Australian seed rounds are angel-led. Expansion of this list, and the inclusion of alternative qualification requirements would help improve the visa. For example, acceptance into a recognised startup incubator or accelerator would be a reasonable threshold test, and a similar approach has been adopted in a number of other countries.

The processing time, cost, and administrative burden of the visa should also be part of a continuous improvement process. Currently, visa applicants will need to pay a minimum of $3600 to file an application (this cost increases if you have dependents). They then need to be accepted by a State or Territory government before their application can be approved. That adds complexity, delay, and red tape. Once the application is formally lodged with the Department of Immigration and Border Protection, the standard processing time for the visa is 9 months.

In the fast-moving, bootstrapping environment of entrepreneurship, this is unlikely to be an enticing prospect for high-quality candidates. These elements should be subject to ongoing review and improvement if the visa is to be effective.

If we are to attract high quality international entrepreneurs we will also need to promote the visa strategically among target groups. Other countries, including the UK and Israel, are actively recruiting the most promising entrepreneurs around the world to take advantage of their equivalent visas. Creative thinking, concerted effort, and dedicated resources will be needed if we are to compete.

A complementary program for attracting promising foreign startups is outlined in Recommendation 7.

// Recommendation 6 (cont)

// RATIONALE

The rationale for an effective Entrepreneur Visa remains strong. Skilled workers are more mobile than at any time in history. UN data shows that over 175 million people live permanently outside their countries of birth.[134]

According to the Global Entrepreneurship Monitor's 2012 Global Report, immigrant entrepreneurs can create jobs, boost global competitiveness, and influence the transfer of resources, information and technological know-how.[135]

The impact of immigrants can be seen in the recent example of WhatsApp, the instant messaging startup founded in Silicon Valley by Ukrainian immigrant Jan Koum in February 2009, and acquired by Facebook in February 2014 for $19 billion. This continues the trend of American immigrant tech founders like Pierre Omidyar (eBay), Elon Musk (Paypal, SpaceX and Tesla) and Sergey Brin (Google).

These figures highlight the economic and social value that can be achieved by embracing entrepreneurially-minded people from other nations.

An effective Entrepreneur Visa is an extremely low cost but effective way of injecting much-needed expertise into the Australian startup ecosystem, increasing the availability of sound guidance to emerging Australian startups, and helping to continue to build a culture of innovation and entrepreneurship.

Importing the best entrepreneurial talent from around the world would help to create more successful Australian-based businesses, provide experienced mentors to Australian entrepreneurs, and bring valuable international perspectives and networks.

[134] hbs.edu
[135] gemconsortium.org

// Recommendation 6 (cont)

A world-class Entrepreneur Visa would also be a valuable tool in retaining more of the approximately 8,000 overseas students who complete a computer science degree in Australian universities each year, by encouraging them to stay in the country and engage in creating a startup.

It also allows us to leverage Australia's highly-desirable lifestyle, stability and natural beauty to improve our economic competitiveness.

Evidence suggests that immigrant entrepreneurs create jobs and boost competitiveness. By way of illustration:

- Recent StartupAUS research found 61% of Australia's most successful tech startups founded since 2003 had at least one first or second generation immigrant founder.
- One third of venture-backed companies in the United States that went public between 2006 and 2012 had at least one immigrant founder
- More than 40% of Fortune 500 companies were founded by immigrants or the children of immigrants (despite the immigrant population of the US averaging only 10.5 percent)
- 60% of America's top 25 startups are founded by first or second generation Americans[136,137]
- 70% of engineers in Silicon Valley are immigrants
- In Israel, immigration (particularly from the former Soviet Union in the 1990s) is credited with playing a major role in the rapid emergence of Tel Aviv's world class startup ecosystem

A policy submission on the Entrepreneur Visa was made by StartupAUS in October 2015.[138]

"Importing the best entrepreneurial talent from around the world would help to create more successful Australian-based businesses, provide experienced mentors to Australian entrepreneurs, and bring valuable international perspectives and networks."

[136] fastcompany.com
[137] renewoureconomy.org
[138] startupaus.org

// Recommendation 6 Cont.

// INTERNATIONAL EXAMPLES

// UK

The UK Entrepreneur Visa[139] was introduced in 2011 and provides a three year residency visa for foreign entrepreneurs conditional on having raised A$90,000 in external funding or having been accepted into one of the accelerator programs pre-approved by the government. Recipients can extend their visa by two years and apply for permanent residency if their business has created at least 10 new full-time jobs in the UK.

In 2013 the UK Government introduced the Exceptional Talent Visa[140] under which individuals with a proven track record in creating successful technology businesses can obtain residency regardless of whether they have already formed a startup business. The program is aimed at attracting the best global talent to accelerate the growth of the UK's technology sector.

// Ireland

The Startup Entrepreneur Programme grants two years residency visas to entrepreneurs conditional on having raised A$70,000 (50,000 EUR) in external funding.

// Canada

An Entrepreneur Visa grants permanent residency conditional on having raised A$74,000 (75,000 CAN) from approved angel investor groups or A$198,00 (200,000 CAN) from approved VC funds. No funds are required to be raised if the applicant is accepted into one of the country's incubator programs.

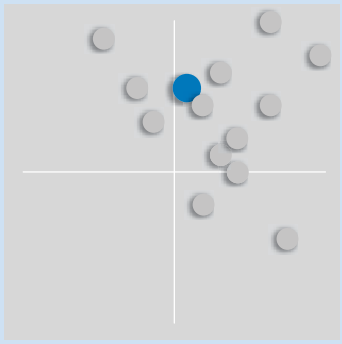
// Singapore

An Entrepreneur Visa grants one year residency conditional on having raised A$47,000 (50,000 SGD) in external funding.

// New Zealand

An Entrepreneur Visa is granted conditional on having raised A$95,000 (100,000 NZD) funding.

[139] techstars.com
[140] gov.uk



// Recommendation 7

// Establish a program to attract promising international startups to Australia

// ISSUE TO BE ADDRESSED

Australia would benefit from an injection of startup experience. While there is potential for Australia to be considered an attractive destination for foreign startups, internationally there is still limited appreciation of the breadth and depth of startup activity that exists here, with many attitudes toward Australia heavily influenced by tourism campaigns that portray Australia as a holiday destination.

// RECOMMENDED ACTION

In parallel with implementation of an Entrepreneur Visa, StartupAUS recommends that the government establish an international business development capability to attract promising startups from around the world to Australia.

A targeted promotional and business development capability would ensure that the most promising startups from around the world can be enticed to Australia, utilising the government's planned Entrepreneur Visa as well as promoting the R&D Tax Incentive as a valuable source of R&D funding. As a mid-size, affluent, fast-adopting English-speaking market, Australia could be positioned as a perfect market for startups to develop and test new products, with the proximity of Asian markets a natural point of expansion.

A similar model has been successfully adopted by UK Trade and Investment which actively (and effectively) encourages startups from Australia and elsewhere to move to the UK, in particular to locate in the burgeoning Tech City UK precinct.

// Recommendation 7 (cont)

// RATIONALE

Given the purely additive nature of these jobs, the income tax and flow on economic impact from importing highly skilled technology jobs is likely to significantly exceed the incremental R&D Tax Incentives received by these companies.

A growing number of countries are actively courting the most promising startups from around the world, adding to the brain drain that is afflicting the Australian tech sector. Many governments are now offering generous financial incentives for foreign startups to relocate, such as UK Trade and Investment's Sirius Program[141,142],Enterprise Ireland's International Startups Fund[143] and a raft of programs available to foreign entrepreneurs in Singapore.[144] New Zealand has launched a series of careers fairs in Australian cities with particular emphasis on attracting disenchanted talent from the Australian tech sector.[145,146,147,148]

[141] gov.uk
[142] oxygenaccelerator.com
[143] newsletter.enterprise-ireland.com
[144] brw.com.au
[145] theage.com.au
[146] theaustralian.com.au
[147] growwellington.co.nz
[148] nzjobfair.co.nz

Theme 5

// Tech startups need tech skills

"We are still growing the expertise and talent pool in Australia around these sorts of companies, whereas here [in the US] it has been around for a while. Rather than developing the whole role from the beginning you can find someone who has done it before."[149] – Jodie Fox, CEO, Shoes of Prey (relocated to Los Angeles in 2015)

There are a large number of entrepreneurs in Australia with viable business ideas but with limited capacity to implement. Whilst these entrepreneurs can succeed by contracting with providers of outsourced technical skills, they face great challenges compared to entrepreneurs with coding skills who can build the first iterations of their product at zero cost.

Digital skills are essential not just to startups, but to the workforce as a whole. Capitalising on the digital economy will only be possible if Australia has the digital skills with which to create products that can compete globally. The computerisation of many industries has also meant that demand for digital skills is not limited to the IT industry, but is increasing across a wide range of industries and occupations.

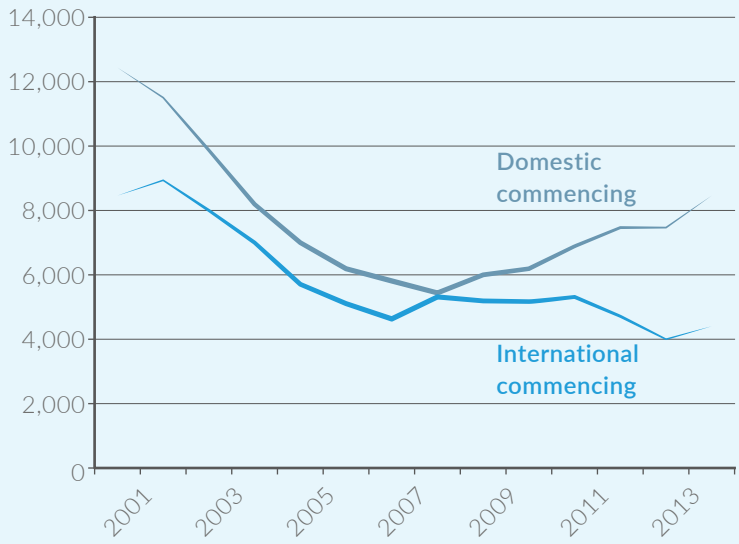


Figure 12: IT bachelor degree commencing students, 2001–2014[152]

[149] afr.com

Over the last decade Australia has faced a significant skills shortage in the technology sector, with demand for IT workers having doubled.

Despite increased enrolments in recent years, tertiary technology courses still suffer a high drop-out rate, with only of 18% of commencing students going on to complete a degree. Australian universities produced only 3,600 domestic IT graduates in 2014 from an intake of 19,900 commencing students in 2011.[150]

According to the Australian Computer Society, Australia's demand for IT workers will grow at an average of 2.0% per annum (compared to 1.4% for the workforce as a whole), reaching 695,000 by 2020. At current tertiary completion rates this will lead to a shortfall of 67,000 IT graduates by 2020.[151]

According to Deloitte Access Economics, Australia's greatest resource for developing the ICT skills required in a growing digital economy is the current workforce.[153] It argues that developing the digital skills of both existing IT workers and the broader Australian population will be important if we are to ensure that we have the necessary skills to capitalise on the digital economy and technology-led disruption.[154]

[150] Department of Education and Training uCube www.highereducationstatistics.education.gov.au

[151] 2016, Deloitte Access Economics & Australian Computer Society, Australia's Digital Pulse: Developing the digital workforce to drive growth in the future

[152] grattan.edu.au

[153] Deloitte Digital Pulse op. ci.

[154] Ibid

// Training the future workforce

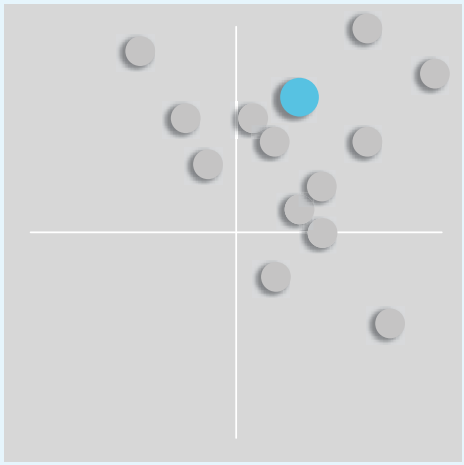
A number of initiatives are underway in Australia, albeit often at a small scale. Some of the most promising examples include:

- Google Australia and the University of Adelaide have collaborated to develop a free open online course[156] to support the implementation of the new national Digital Technologies Curriculum by equipping Australian primary school teachers with skills to help them effectively teach the new curriculum. Adelaide University received $6.9 million under the NISA funding to expand this work and put project officers in each state to implement the MOOC and further in person PD developed with ADL Uni and Google. There are now three courses and over 5,500 teachers have completed the MOOCs.
- The Victorian Government has partnered with Microsoft Australia to run the Victorian Schools' App and Game challenge to solve problems using creativity. The challenge encourages Victorian students in Years 6, 8 and 10 to take an entrepreneurial problem solving approach by creating a 'prototype' application or game – applying principles of computational thinking, product design and coding – to solve real-world issues such as climate change, world hunger or poverty. The partnership will also provide teachers with professional development programs and free online modules to develop their skills teaching digital technology and creative thinking.
- Refraction Media, in partnership with multiple universities, Google, and Digital Careers has created a world-first Careers with Code guide[157] which has been distributed to every school in Australia. Focusing on the variety of CS + X careers (where X is another discipline such as arts, design or medicine) the guide showcases the careers of the future, highlights entrepreneurs as role models, and provides pathways to relevant university degrees. In 2016 the guide will be expanded due to collaborations and sponsorship between more universities and industry. A box will be sent to every high school in Australia in late 2016.
- Cisco Australia has announced AUSTEM 2020, a STEM skills development program under which Cisco will invest up to $31 million over five years.[155] The program will provide training to 100,000 high school and university students in subjects such as cyber security, cloud and internet-of-things, and provide access to Cisco staff as mentors.

[155] afr.com
[156] google-au.blogspot.com.au
[157] refractionmedia.com.au

- The National Computer Science School[158] is a summer school that delivers an intensive week of computer programming, web design and related activities for year 10 and 11 children. It is run by the University of Sydney and NICTA, and supported by the NSW Government plus local technology companies including Freelancer, Atlassian and Google Australia.
- CoderDojo[159] is a volunteer-led extra-curricular program that teaches children aged 5 and 17 how to create websites, apps, games and other computer programs. It was started in Ireland in 2011 and now has 200 registered dojos with 6,450 participants in 22 counties. CoderDojo was launched in Brisbane by Brisbane City Council in 2013[160] and is now operating in eight libraries across Brisbane.
- Code Club Australia has 45,000 students enrolled, Google's CS First provides free code club materials for use by anyone - no experience needed - and has over 500 new clubs this year.
- FIRST Australia hosted the first APAC regional robotics competition with over 26 high school teams competing at Sydney Olympic Park in March 2015. Students participating in FIRST are 10 times more likely to enter STEM study, based on research conducted at Brandeis University. FIRST Australia started in 2006 as a not-for-profit within Macquarie University, and today is an annual program with 500 teams comprising 4,500 students, covering K-12.

[158] ncss.edu.au
[159] coderdojo.com
[160] coderdojobrisbane.com.au



// Recommendation 8
// Extend the Digital Technologies Curriculum

// ISSUE TO BE ADDRESSED

The Federal Government recently began implementing a significantly updated Digital Technologies Curriculum which is the nation's first coordinated effort to teach computer science in every primary and high school.

All states are currently working on early phase implementation of the curriculum commencing in 2017. It has computational thinking as a mandatory subject until Year 8, and an elective for Years 9 and 10.

// RECOMMENDED ACTION

StartupAUS advocates extending the Digital Technologies Curriculum to make computer science and computational thinking a mandatory component of the school curriculum in Years 9 and 10, and an elective subject in Years 11 and 12.

Implementing and extending the Digital Technologies Curriculum also requires investment in careers guidance so that students receive appropriate advice, funding and ongoing support. Extending the program in this way would help students understand how to connect their educational outcomes with career pathways.

// RATIONALE

Extending the Digital Technologies Curriculum would make it consistent with trends in computer science education in countries such as the USA, the UK, New Zealand, the Netherlands and Vietnam, where it is a required subject in schools from kindergarten to Year 10 or beyond understand how to connect their educational outcomes with career pathways.

// INTERNATIONAL EXAMPLES

// Estonia

All publicly educated students now learn how to code starting in first grade and continue to age 16 in their final year of school.

// Vietnam

Computer science education now begins in Year 4 and continues as a mandatory subject through to final year of high school.

// New Zealand

The New Zealand Government recently announced that digital technology will be formally integrated into the school curriculum by 2018.[161]

// UK

From September 2014 coding was a mandatory part of the school curriculum for all students aged 5 to 16 years old.[162]

[161] startupdaily.net
[162] yearofcode.org

// Addressing the immediate skills shortage

Improving Australia's capacity to produce digitally literate school leavers and university graduates is vital, but will only have an impact in the medium term. It is therefore essential that Australia address the short term skills gap by finding efficient ways to attract and retain skilled workers from other countries.

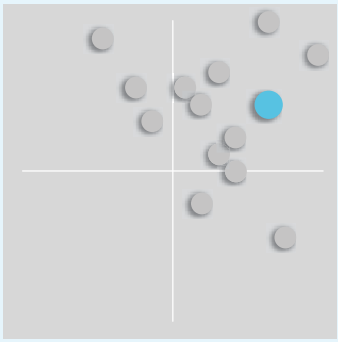
In response to the current IT skills shortage, Australia saw a net inflow of 19,600 IT workers from overseas in 2015, with 13,900 of these workers coming to Australia under Subclass 457 (temporary skilled work) visas.

According to Atlassian, around 25% of its approximately 1,000 Sydney-based staff are employed on 457 visas, a trend which is mirrored in other rapidly growing Australian startups as well as multinationals performing R&D in Australia.

Overseas IT workers are not only helping Australian startups bridge the skills gap, they are also providing much needed management and product development experience to Australian tech companies as they scale and begin to enter global markets. The ability to recruit alumni of large international tech companies such as Apple, Microsoft, Facebook, Google and Amazon is especially valuable to the Australian tech sector as it can allow growing companies to fast-track the learning curve based on experience that does not yet exist within the Australian tech sector.

As a fast growing startup in a less mature tech market like Perth, HealthEngine has struggled to find quality of talent in the volume we require locally. It is a well-known phenomenon in startups that A-list talent want to work with other A-listers. Incentives and less restrictive visa requirements would go a long way to help attract talent with diverse experiences, particularly internationally which is essential especially in less mature startup ecosystems.

Dr Marcus Tan
CEO, HealthEngine



// Recommendation 9

// Relax restrictions on 457 visas for startups

// ISSUE TO BE ADDRESSED

Australian tech startups that are growing rapidly are universally unable to recruit enough skilled Australian IT workers. This is currently a major impediment to growth in the Australian startup sector and is one of the reasons these companies rely heavily on recruiting from overseas.

Currently the administrative challenges associated with obtaining 457 visas are impeding efforts of young Australian tech companies to recruit skilled IT workers in both of the above categories.

// RECOMMENDED ACTION

StartupAUS acknowledges that the government has committed to reviewing the 457 skilled migration visa, and encourages the government to ensure restrictions to the visa are appropriately relaxed to enable Australian startups to employ sufficient skilled overseas IT workers to meet the current skills shortfall.

"Accessing global talent is critical for Australian startups. We need to make it easier, not harder, for innovative fast growth companies to access the world's best and brightest talent."

Jonathan Barouch,. CEO, Local Measure

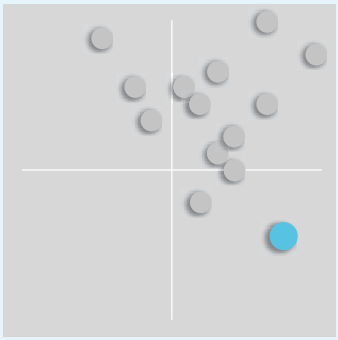
To overcome difficulties faced by startups, a review of the 457 visa could consider:

- Allowing for a special streamlined application process for startups, with minimal ongoing compliance and fast processing times
- Applying only very limited salary requirements, acknowledging that most startups cannot afford to pay market rates, instead favouring employee share schemes as a means of incentivising staff
- Recognising prior experience of the applicant and their spouse
- Ensuring visa conditions do not preclude spouses from working in Australia
- Emulating aspects of the United States H-1B visa which allows employers in specialty occupations to obtain visas which they can then assign at their discretion to foreign workers. This enables employers to allocate the visas to the best suited candidates and not just to those candidates who have been able to secure visas themselves.
- The visa should be supported by a positive stance from the Department of Immigration, briefed to help Australian companies access the talent they require.

The government would be right to take steps to ensure any changes are not abused by industries seeking to replace Australian workers with workers from lower cost-of-labour locations. StartupAUS believes that the use of an appropriate definition of a tech startup would assist greatly in achieving a fair outcome. Baseline definitions can now usefully be found as part of the ESS and ESIC legislation.

// RATIONALE

An improved 457 visa would help circumvent many of the concerns startups have with seeking talent from overseas. The amendments would allow cash-strapped and time-poor startups to acquire specific, technical talent quickly and without administrative hassle. This would help level the playing field with larger tech firms and provides startups access to a pipeline of international talent at an earlier stage.



// Recommendation 10

// Implement measures to counteract high cost of living for foreign skilled workers

// ISSUE TO BE ADDRESSED

Australia has a relatively high cost of living that is currently acting as a disincentive for skilled foreign workers to accept offers of employment with Australian startups. Startups employing staff on 457 visas find that healthcare, public education, and housing costs are a significant burden and are affecting their ability to attract the best talent, particularly given that equity is frequently used in place of salary for significant portions of remuneration packages.

Despite the fact that workers on 457 visas pay full income tax and GST in Australia, they are not automatically entitled to send their children to public school free of charge and must compulsorily acquire private health insurance rather than rely on the Medicare system. This compounds Australia's already high cost of living even further.

// RECOMMENDED ACTION

Most State governments currently charge fees for workers on 457 visas to send their children to public school. These fees vary by location and school level, but typically it costs around $5000 per child per year. StartupAUS recommends State governments remove these fees for employees on 457 visas working for eligible startups.

High cost of living in Australian cities could also be offset by the re-introduction of the Living Away From Home Allowance. The LAFHA program was widely available to overseas workers until the government significantly tightened the program in 2012,[163] making it effectively inaccessible for startups.

// RATIONALE

The LAFHA program was a valuable and relatively low cost means of defraying some of the living costs of foreign workers and ensuring Australian startups were able to attract the highest calibre workers.

Changes to the LAFHA program were reportedly made in response to rorting of the system in some sectors. StartupAUS believes that the response was too heavy-handed and an acceptable outcome could be achieved by reviewing the program to ensure it operates to the benefit of startups without being open to abuse by sectors which are not experiencing a market failure.

Fees for public tuition of children are burdensome on employees on a startup salary. Given there is a genuine need to help startups access overseas talent, and 457 visa workers are liable to pay full income tax and GST (and are therefore contributing to the public education system by the same mechanism as local workers), it is difficult to identify a convincing rationale for retaining these fees for such workers.

[163] hlafha.com.au

Theme 6

// Australia needs to produce more entrepreneurs of its own

Strictly speaking, an entrepreneur is anyone who starts any kind of new business. However, StartupAUS makes a clear distinction between needs-based entrepreneurship (which is often characterised by self-employment and creation of undifferentiated small businesses) and opportunity-based entrepreneurship in which high-growth companies are created to tackle large, high value opportunities and based on a clear competitive advantage.

Australia has some very successful Australian technology companies, including Atlassian, Seek, REA Group, and others. Nevertheless, care needs to be taken not to succumb to an availability bias – in which we incorrectly assume that successful startups are common in Australia because we are readily able to bring several examples to mind. There are currently around 2,200 companies listed on the ASX with a combined value of A$1.5 trillion, of which software companies comprise 4% by number and 1.4% by value.[164,165] In contrast, the top 150 companies in Silicon Valley are all technology-based and have a combined market capitalisation of A$2.4 trillion, exceeding that of the entire ASX.[166] These 150 companies have annual combined sales of A$900 billion and employ 1.3 million people[167] – many of these in high-skill, high-value jobs.

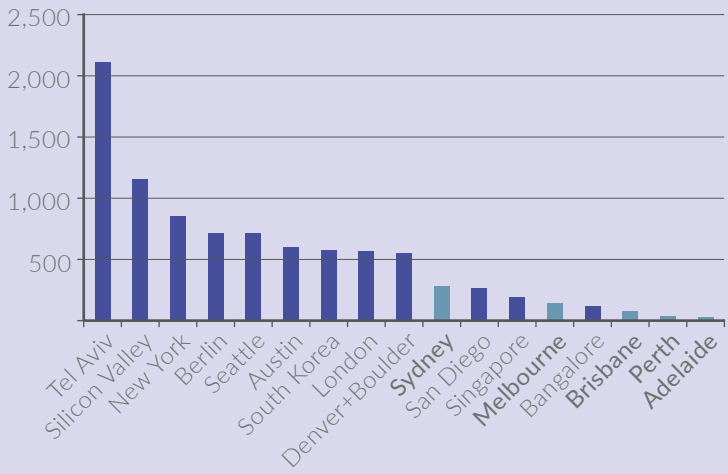


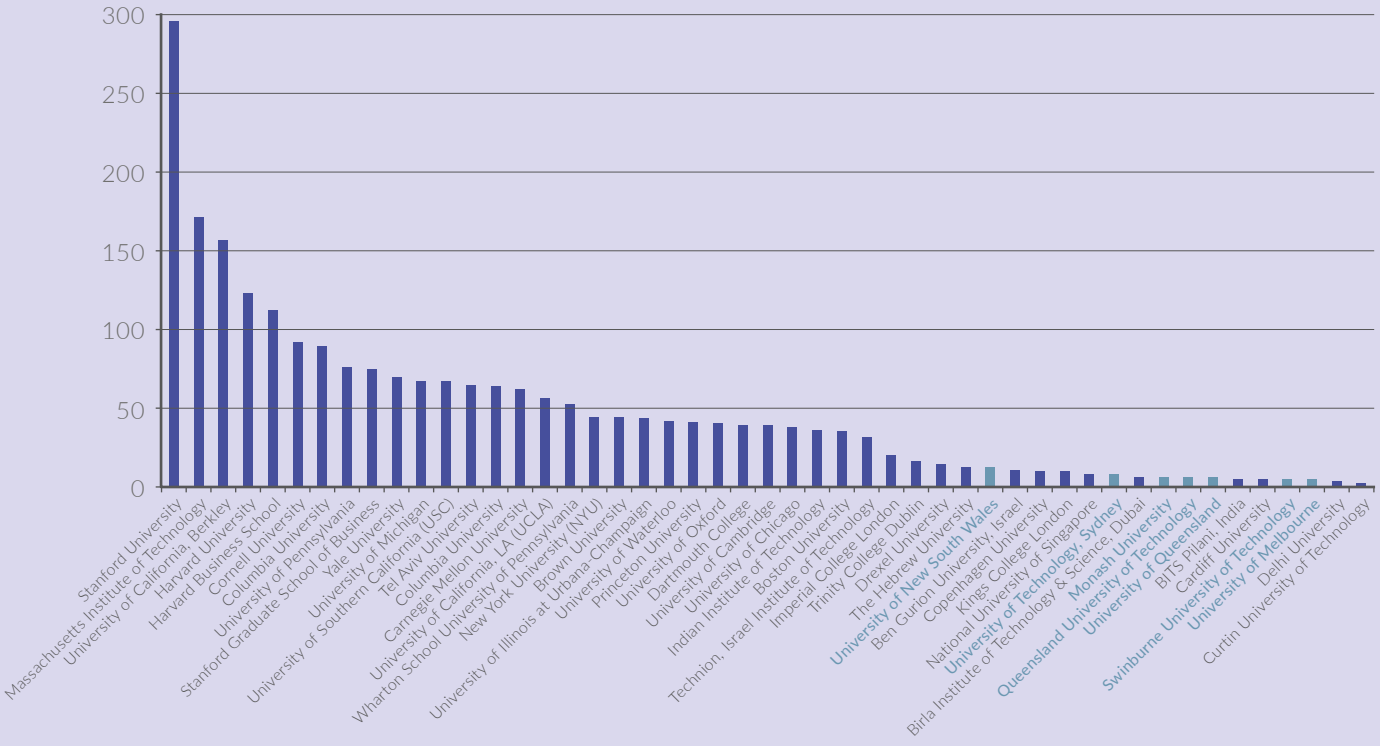
Figure 13: Tech startups per million of population[169]

Research by BoundIss[168] shows that current startup formation rates in Australia are in the order of 20 to 30 startups per million people per year. To put this in perspective, the most recently available data from the US shows that startup hotspots such as Boulder, San Jose and San Francisco had annual startup formation rates ranging from 100 to 250 startups per million people per year.

As can be seen in Figure 13, Australia has a relatively low rate of tech startup formation in a global context.

[164] markets.businessday.com.au
[165] asx.com.au
[166] siliconvalley.com
[167] siliconvalley.com
[168] medium.com
[169] Sources: Crunchbase, Mashable, Startup Economy, Wall Street Journal, The Economist, AngelList

Figure 14: Startup founders by university[171]



One of the reasons for the low level of participation in startups in Australia is the limited exposure the general public has to entrepreneurship, combined with a culture that does not celebrate or promote an entrepreneurial mindset. Entrepreneurship is still seen as an unusual career path, and even when children are exposed to the notion of starting their own company they are often guided toward small business creation.

In its 2012 Review of Venture Capital and Entrepreneurial Skills,[170] the Federal 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."*
If Australia is to become competitive in the technology sector we will need to rapidly increase the level of participation in high-growth entrepreneurship. To achieve this we will need to encourage children, parents and teachers to consider the possibility of business creation as a career path rather than the current default expectation that kids will *"get a good education in order to get a good job"*.

A similar observation can be made from the rates of startup formation from graduates of Australian universities. The following chart shows that relative to many overseas institutions, Australian universities are producing graduates who are significantly less predisposed to startup formation.

[170] avcal.com.au
[171] info.crunchbase.com

// Producing Australian entrepreneurs

Australia is one of 129 countries that are signatories to United Nations Resolution 67/202 "Entrepreneurship for development"[172], aimed at encouraging entrepreneurship as a driver of job creation. In particular the resolution highlights "the value of teaching entrepreneurial skills at all levels of education" and encourages entrepreneurship education through skills development, capacity-building, training programs and startup incubators.

Many countries have made the policy shift from approaching tech startups as early-stage corporations to a focus on the entrepreneurs themselves, due to the importance of developing entrepreneurial skill sets.[173]

Currently the Australian education system is geared toward preparing students for the workforce. More can be done to adequately equip young people to start businesses, particularly high-growth startups.

// SCHOOL-BASED PROGRAMS

There are a small number of existing programs in Australia aimed at raising awareness and stimulating an interest in entrepreneurship, such as Club Kidpreneur Foundation[174] which runs entrepreneurship exposure programs in 250 primary schools in Australia. The program aligns with the school curriculum and supports several important national curriculum objectives such as financial literacy. It has thus far engaged around 2,400 children (ie. 0.12% of the 2 million children enrolled in Australian primary schools). Club Kidpreneur Foundation is a not-for-profit entity established by successful entrepreneur Creel Price with modest financial support from Google Australia and a number of city councils.

Further support would enable programs like these to be expanded so that every Australian child is exposed to entrepreneurship and has some experience of business creation.

Currently there are no widely implemented entrepreneurship programs in Australian high schools. The creation of an entrepreneurship elective in high schools would put Australia on par with the education systems in much of Europe, the US and Singapore where entrepreneurship is increasingly seen as an essential component of the secondary curriculum.

In the US it has been found that up to 20% of students who participate in an entrepreneurship training program in secondary school will later start their own company – a rate about five times that of the general population.[175]

[172] un.org
[173] ict.org.nz
[174] clubkidpreneur.com
[175] C. Jenner, 'Business and Education: Powerful Social Innovation Partners', Stanford Social Innovation Review (Aug. 27, 2012).

// UNIVERSITY-BASED PROGRAMS

Universities have an important role to play in educating and cultivating future entrepreneurs. A recent report by Spike Innovation, commissioned by Australia's Chief Scientist,[176] investigated the link between exposure to entrepreneurship during university and starting a business, concluding that there is a clear causal relationship.

The report noted that one of the largest studies was conducted at the National University of Singapore (NUS) and followed 836 NUS students from a wide range of disciplines who took part in (a) traditional classroom-based entrepreneurship education programs, and (b) experiential entrepreneurship programs such as incubators, business idea competitions, mentoring programs and startup internships.

The study examined the impact of the two types of entrepreneurial learning on the students' entrepreneurial attitudes (ie. how interested they are in starting a company in the future) and entrepreneurial actions (ie. whether they actually took concrete steps toward launching a new venture).

The NUS study reached two important conclusions:

1. Participation in classroom-based entrepreneurship programs positively influences entrepreneurial attitudes, but not actions.
2. Participation in experiential entrepreneurship programs positively influences both entrepreneurial attitudes and actions.

These findings have two important implications for teaching entrepreneurship:

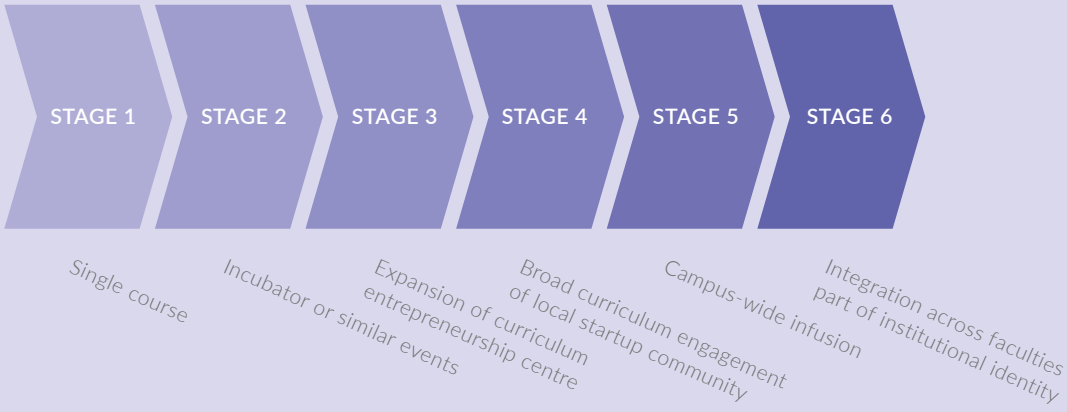
I. Classroom-based entrepreneurship education programs by themselves have little effect on rates of entrepreneurship; and

II. Experiential entrepreneurship education programs are vital if we want to produce more entrepreneurs. They provide an environment in which students can experience aspects of actually forming a startup in a relatively safe environment and with regular support and guidance.

[176] Spike Innovation, Boosting High-Impact Entrepreneurship in Australia: A Role for Universities, www.chiefscientist.gov.au

The same report considered the maturity of the entrepreneurship teaching and startup support programs at Australian universities and concluded that most universities sit in stages 1 or 2 of a 6-stage continuum, as shown here.

Figure 15: Framework for assessing the maturity of a university's entrepreneurship ecosystem



In many instances, the quality of entrepreneurship education in Australian universities is well below international best practice, owing in part to the fact that Australia has come late to the party in teaching entrepreneurship in earnest. Our universities are now having to catch up in response to student demand.

The Spike Innovation report[177] found that best practice university entrepreneurship programs have the following attributes:

- Multiple opportunities for engagement by students with an interest in startups
- Focus on experiential programs with a strong emphasis on learning by doing
- Encourages students to take concrete action to pursue ideas rather than taking a theoretical approach
- Based on modern startup methods (eg. Lean Startup) and does not engage students in the writing of lengthy business plans
- Encourages multi-disciplinary collaboration and actively includes STEM students
- Engages successful entrepreneur alumni as guest lecturers/ mentors/teachers
- Connects with outside startup ecosystem
- Allows students to self-select into programs based on interest
- Focuses on growing the individual rather than their idea

[177] Spike Innovation, Boosting High-Impact Entrepreneurship in Australia: A Role for Universities, www.chiefscientist.gov.au

The report also sets out a comprehensive action plan for improving the quality and quantity of entrepreneurship education and startup programs in Australian universities. The report recommended that the government:

1. Ensure that funding arrangements with universities drive investment in establishing and delivering best practice student entrepreneurship programs;
2. Establish an expert steering group to advise on best practice entrepreneurship program design and delivery;
3. Establish a prestigious national Entrepreneurs-In-Residence program to engage successful entrepreneurs in Australian universities;
4. Implement changes to the ERA framework to encourage activities that lead to economic impact rather than viewing publications as an endpoint in themselves;
5. Support universities in implementing a national program of Entrepreneurship Leave to enable academic staff to pursue startup opportunities;
6. Introduce "entrepreneurship activity" as a criterion for academic promotion; and
7. Improve access to university-generated intellectual property by students and staff who wish to pursue a startup based on that IP.

[1] Spike Innovation, Boosting High-Impact Entrepreneurship in Australia: A Role for Universities, www.chiefscientist.gov.au

// A perspective on how Australian university students view entrepreneurship as a career path

Contributed by
Janet Matta,
Career Development Expert and CEO, CareerJanet
Former Career Development Manager, UTS and Career Services Advisor at University of Washington

Entrepreneurship is a growing career option for university students and graduates, and one that a large number of students in Australia are considering or moving toward. There are many attractions for students to pursue entrepreneurship, but many challenges and deterrents as well.

The primary attraction to entrepreneurship for most young people in the millennial generation is a desire for self-determination. On the other hand, the two biggest obstacles university students face to entrepreneurship are the lack of a financial safety net, and the lack of a robust network that can provide needed expertise. It can be helpful to consider the interests and obstacles for Australian university students alongside those experienced by American university students as well.

// Interest in entrepreneurship

When observing university students' career decision-making, several themes emerge that are especially strong in those students who show an interest in entrepreneurship as a career path. First, students are strongly motivated by self-determination. It is common to hear students interested in entrepreneurship speak of a desire for freedom in their work, of time, location, and from expectations or restrictions that others above them might place on the content and context of work, their mobility, or their career progression.

Students are attracted to entrepreneurship because of the perceived control that they will have over their work and their career path. Going into traditional corporate employment is seen as sacrificing control and involves accepting the decisions of others in a traditionally corporate setting. As one 2016 UTS graduate commented, *"Students don't want to follow the traditional generation, we want to do our own thing, on our own time, and make our own decisions."* This desire for self-determination, control over their future career prospects, and freedom, is a big draw for many, and this is a theme found in both Australian and American university students.

Another theme that arises as a draw to entrepreneurship is a desire to do something "cool", and to experience the rewards of working directly and impactfully on interesting problems and topics. Students have the perception their work will simply be more interesting and meaningful in starting their own company or working with others in entrepreneurship than joining a more

traditional career path. In addition to the desire for self-determination and meaning, students will also talk about entrepreneurship as being more accessible an option than seeking full-time traditional employment. The view that you can create your own job rather than compete with others or try to find the right job and get in with the right person at the right company is appealing. This is particularly seen as a bonus in Australia, where the graduate labour market is tighter than in the US, and forces students to think about alternative options to competing for a scarce number of graduate jobs.

In the US, entrepreneurship is also appealing because it is increasingly common. As one American recent graduate put it, "Every 20-something has a business idea or a product or a company that they want to see live someday. Every young person in the 80s wanted to be a rock star, and today, young people want to be entrepreneurs." When young people see others creating interesting lifestyles through entrepreneurship, it is appealing to want to join in.

// Obstacles to entrepreneurship

When it comes to obstacles that young people face in considering entrepreneurship as a viable career path, there are two notable ones that stand out. The first is money for living, or "a lack of a safety net". Another recent graduate simply referred to this obstacle as, "survival", language that demonstrates how serious the need for a stable income is for young people coming out of university.

Launching a venture, for young people, means sacrificing regular and predictable income knowing that it may take a very long time before earning enough to have the quality of life that will meet their needs or desires. This is a significant problem that keeps many young people and students from pursuing entrepreneurial aspirations, even if they have a viable idea and skills to implement it. "To live and survive you need to work for a company providing ongoing reliable money," a recent UTS graduate commented.

It's worth noting that the students don't often talk about needing finance to launch their business, as many of them who do this successfully start small and using skills and resources they already have. Rather the problem is how to sustain their livelihood while they take the time to build their idea or product.

This problem is magnified in the United States, where university graduates often complete their studies with debilitating student loans. The need to pay off the high cost of their education leads many to sacrifice the entrepreneurial trend in favour of corporate employment that prioritizes their ability to pay off their debt obligations. This is a trend that we are likely to see increase in Australia as university education costs rise.

In addition to the financial barriers of needing a stable income, students also face difficulty engaging with a supportive and accessible network that could support them in realizing their entrepreneurial aspirations. What young entrepreneurs need is mentorship and partnership with those who have the skills that they lack due to their inexperience. While young people often have the technology savvy to create innovative solutions to a market problem, they may lack the financial, legal, or marketing skill to make their venture a success and provide the confidence needed to launch a business. A lack of relationships with other more experienced entrepreneurs can leave aspiring entrepreneurs feeling alone and lacking the team needed to launch.

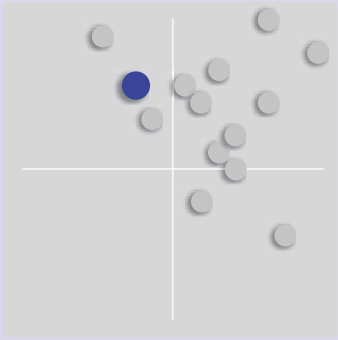
One recent graduate of the UTS Hatchery program noted, "How do you meet those people? Time is precious for experienced people, those people are really busy." And, this problem exists for both American and Australian young people, an American recent graduate commented,

"Some people just simply don't have access to any resources, they don't know where to go, who to set up meetings with, which people to trust and which not to, etc. Nobody creates a multi-million dollar company on their own. Being unable to physically find resources and engage with the entrepreneurship community is a huge hurdle."

Other topics that come up with students as obstacles include feeling a lack of confidence in their ability to start a successful business, which is often linked to a fear of failure and the lack of safety net if a failure does occur. Similarly, students and recent graduates comment on their need to develop business skills or market knowledge before they feel comfortable launching a venture, leading many to pursue full time employment or postgraduate study as a learning experience prior to engaging with or dedicating themselves to entrepreneurism. *"There should be the 'School of Startups'"*, one recent graduate in Australia commented.

// What is needed?

Students are incredibly motivated by the self-deterministic aspect of entrepreneurism, and many are keen to launch or participate in startup ventures. Their enthusiasm for the opportunity to create work that is their own and is meaningful drives students to seek out this path. However, removing the barriers that currently stand in the way of students being able to fully express this freedom and innovation is necessary to maximize the opportunity the Australian economy could realize through supporting young entrepreneurs. Specifically, providing financial support for living expenses of young entrepreneurs who are studying or have recently graduated, along with accessible and dedicated mentorship and guidance from experienced entrepreneurs, could go a long way in helping foster a climate of innovation within university students and recent graduates.



// Recommendation 11

// Implement entrepreneurship programs in all Australian primary and secondary schools

// ISSUE TO BE ADDRESSED

Australia does not have a rich history of entrepreneurship, and for the most part does not have a culture that celebrates or promotes an entrepreneurial mindset.

The reasons for this include the limited exposure the general public has to entrepreneurship and scarcity of successful entrepreneur role models. Entrepreneurship is generally seen as an unusual career path, and even when children and young adults are exposed to the notion of starting their own company they are generally guided toward small business creation.

// Recommendation 11 (cont)

// RECOMMENDED ACTION

StartupAUS recommends that the federal and State governments work together to create comprehensive entrepreneurship exposure and education programs in all schools, commencing by Year 6 and continuing to at least Year 10.

It is well established that attitudes toward entrepreneurship are shaped well before university, and StartupAUS therefore recommends that the introduction of programs in the primary and high school curriculums to expose children to basic entrepreneurship concepts.

Funding could take the form of grants available to schools to establish programs that are in line with world's best practice, and would enable schools to deliver programs and engage successful entrepreneurs and others with deep knowledge of entrepreneurship concepts rather than rely purely on existing teaching staff.

Influencers such as teachers, careers counsellors and administrators will also need suitable training so that students can be engaged and encouraged at every opportunity.

// RATIONALE

According to a recent World Economic Forum report,[178] a lack of emphasis on entrepreneurship education and poor cultural support for entrepreneurs are among the reasons Australia's startup ecosystem is lagging behind those of many other developed nations.

Funding for schools would enable them to develop high quality entrepreneurship programs that would expose large numbers of children to basic entrepreneurship concepts before they reach university.

[178] weforum.org

// Recommendation 11 (cont)

// INTERNATIONAL EXAMPLES

A growing list of countries have implemented entrepreneurship exposure and education programs in primary schools and high schools. Below are some examples:

// UK

Young Enterprise Program[179] launched with funding from the UK Government in partnership with Virgin Money to develop primary and secondary students' business creation skills and attitudes by launching micro-businesses. Engaged 20,000 children in 500 primary schools in 2014, plans for 30,000 in 2015 and 40,000 in 2016.

// Europe

The European Commission is introducing education programs under which entrepreneurship will be embedded in the curriculum across primary and secondary schools. This will include opportunities for students to have at least one practical entrepreneurial experience such as running a mini-company or entrepreneurial project.[180]

The EU is also introducing "Entrepreneurship Day" for students in their last year of secondary school and will include meetings with entrepreneurs, case studies, lectures, workshops and company open days.

// US

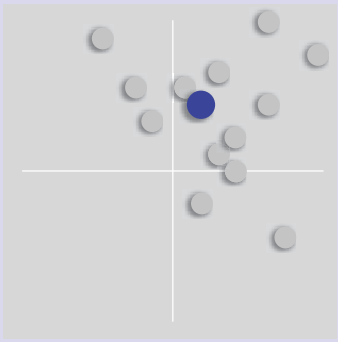
The Kauffman Foundation in the US provides a range of modular entrepreneurship programs that schools can incorporate in the curriculum or provide as an extra-curricular activity.

The Junior Achievement program[181] which exposes students to entrepreneurship principles through experiential, hands-on programs delivered largely by volunteers from the business community. Currently 4.4 million students participate in the program every year in the US.

// Singapore

The Singapore Government's Young Entrepreneurs Scheme for Schools[182] provides schools with grants of up to A$90,000 to implement entrepreneurship learning programs for students.

[179] gov.uk
[180] bit.ly/19ZPJd8
[181] www.juniorachievement.org
[182] www.spring.gov.sg



// Recommendation 12
// Implement entrepreneurship programs in all Australian universities

// ISSUE TO BE ADDRESSED

Despite a recent spike in interest in startups, Australia has a relatively low rate of tech startup formation in a global context. If Australia is to become globally competitive in the technology sector we will need to rapidly increase the level of participation in startups.

// RECOMMENDED ACTION

StartupAUS recommends that comprehensive entrepreneurship exposure and education programs be introduced in all tertiary institutions.

Programs should expose university and TAFE students to startup-focused entrepreneurship via technology entrepreneurship subjects, and through experiential programs such as incubators, accelerators, internships and overseas placements.

Funding would enable institutions to deliver programs and engage successful entrepreneurs and others with deep knowledge of startup best practice rather than rely purely on existing academic staff to teach subjects and oversee experiential programs.

Particular attention should be given to experiential programs as these have been shown to greatly increase the likelihood of students forming or joining startups as an alternative career path to traditional employment.

Government support could take the form of grants available to universities to establish programs that are in line with world's best practice.

// Recommendation 12 (cont)

// RATIONALE

Australian universities are not funded to deliver startup education or support programs, and most programs that do exist are sub-scale and delivered by academic staff with limited first-hand exposure to startups.

Funding would enable universities to create high quality, impactful programs that would expose large numbers of students to startups and entrepreneurship, and produce graduates who have the capability to create technology-based companies that will underpin Australia's future economic growth.

As noted by former Australian Chief Scientist Professor Ian Chubb, *"We can wait for the one-in-a-million natural-born entrepreneur to successfully seize the once-in-a-lifetime opportunity to create change. Or we can make our own luck by using the education system to give people the skills and knowledge that will make them entrepreneurs."*[183]

[183] Spike Innovation, Boosting High-Impact Entrepreneurship,

// INTERNATIONAL EXAMPLES

// Singapore

The National University of Singapore's Entrepreneurship Centre has provided experiential technology entrepreneurship education programs for students since 1999. The university also runs an annual intensive Entrepreneurship Summer Schools for foreign students, a New Venture Creation workshop for professionals in the workforce, a student accelerator program and the NUS Entrepreneurship Society. The Entrepreneurship Centre is financially supported by the Singapore Government.

// US

The Stanford Technology Ventures Program[184] is an entrepreneurship program run by Stanford University's School of Engineering specifically to equip students with the skills they need to become successful tech startup entrepreneurs.

Stanford also runs the Entrepreneurial Thought Leaders weekly lecture series in which the university invites successful entrepreneurs back to the university to share their experience with students, and the Entrepreneurship Corner which hosts a collection of 3,000 free videos and podcasts featuring entrepreneurship thought leaders.

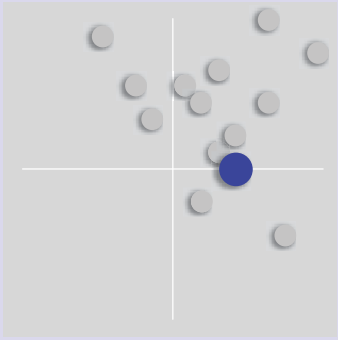
// Europe

The European Commission[185] recently committed A$23 million to support development of entrepreneurship education programs to be delivered via accelerators, incubators and hubs and aimed primarily at university students.

"Entrepreneurship is crucial to innovation and economic growth. Encouraging young students to develop their entrepreneurial skills is highly beneficial for the students as well as for the innovation ecosystem. Students at a stage in their career in which they are very open to learn and try new things, and this is the essence of entrepreneurship. However, starting a new project or company might seem to some of them an obstacle too hard to overcome. It is our job to 'nudge' them to try and experiment with entrepreneurship while testing their abilities and potential."[186]

Avi Hasson
Israel's Chief Scientist

[184] stvp.stanford.edu
[185] europa.eu
[186] Quoted in "Boosting High-Impact Entrepreneurship in Australia: A Role for Universities"



// Recommendation 13

// Introduce a Startup Scholarship for STEM graduates

// ISSUE TO BE ADDRESSED

Too few STEM graduates are pursuing careers as entrepreneurs due in part to a lack of awareness of the opportunities that exist – despite the fact that STEM skills are integral to the creation of technology-based companies.

As a result, Australia is producing too few tech startups that can become globally competitive technology companies.

Similarly, many of Australia's most promising startups have difficulty recruiting technical talent due to the strong preference shown by graduates toward gaining employment in an established firm, particularly if the employer is able to offer a higher salary than a startup.

// RECOMMENDED ACTION

StartupAUS recommends that the government implement a prestigious scholarship program to encourage high performing university STEM graduates to join or form a startup within their first 3 years of graduating. Such a scheme could provide up to $20,000 per year – either as a salary top-up for two years paid directly to students, or via HEC/HELP student loan debt waivers.

// RATIONALE

Such a scholarship would encourage more STEM graduates to consider forming or joining a tech startup. It could help overcome social barriers stemming from entrepreneurship's low vocational prestige. It would also allow startups to compete with established corporates for top STEM graduate talent and would help grow local tech and entrepreneurial talent.

Increasing the number of young entrepreneurs in Australia would not only boost the level of startup formation, but also lead to repeat entrepreneurs whose experience as young entrepreneurs equips them well to continue their entrepreneurial journey later in life.

Increasing the number of people who have the experience of serving as technical founders or co-founders would allow greater proliferation of startup opportunities for non-technical entrepreneurs with promising ideas that are active in the startup ecosystem.

// INTERNATIONAL EXAMPLES

// US

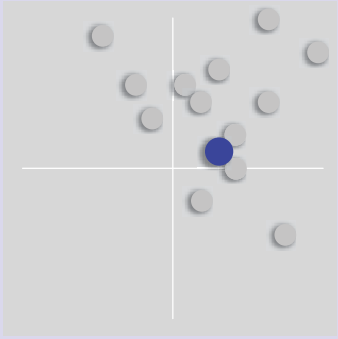
The Young Entrepreneur Foundation[187] was established by the National Federation of Independent Business to raise awareness of the important role of entrepreneurship in young people. In the last ten years, the Young Entrepreneur Foundation has awarded over 2,400 scholarships of up to A$11,000 to support and encourage young entrepreneurs.

// Canada

The Canadian Youth Business Foundation[188] is a government-funded agency that provides concessional loans of up to A$45,000 to young entrepreneurs.

In the last 16 years it has provided funding to 5,600 young Canadian entrepreneurs whose businesses have created over 23,000 new jobs, $160 million in tax revenue and hundreds of millions of dollars in sales.

[187] nfib.com
[188] cybf.ca



// Recommendation 14

// Immerse Australian university students in Silicon Valley and other startup hubs

// ISSUE TO BE ADDRESSED

Australian universities lag those in many other countries in exposing students to high-impact entrepreneurship. Consequently graduates of Australian universities are less likely to form startups than graduates from universities in many other countries.

// RECOMMENDED ACTION

StartupAUS recommends that the government, in conjunction with the university sector, establish an overseas startup immersion program for university students. Such a program should immerse at least 200 students per year in Silicon Valley and other startup hotspots around the world, and would be an effective way of exposing students to a vibrant entrepreneurial culture, inspiring them to become entrepreneurs and equipping them with valuable skill sets and connections.

The program could leverage the Landing Pads being established by the government and would be a logical extension of their roles. It could also leverage existing programs such as Startup Catalyst,[189] a not-for-profit initiative which places Australian university students in startup hot-spots for periods of ten days at a time.

[189] startupcatalyst.com.au

// RATIONALE

A recurring theme for Australian entrepreneurs is the immense value gained from visiting startup hot-spots such as Silicon Valley, and the growing importance of having connections into that ecosystem.

// INTERNATIONAL EXAMPLES

// Singapore

The National Overseas Colleges (NOC) program is widely regarded as the global benchmark for exposing students to vibrant startup ecosystems. It is an internship and overseas immersion program that places 200 students per annum from National University of Singapore as interns in high-growth tech startups in hubs such as Silicon Valley, Beijing, Stockholm and Tel Aviv for up to a year in parallel with studies at local universities such as Stanford and KTH Royal Institute of Technology.[190]The Singapore Government has been funding the NOC program since 2001.[191] It is viewed as one of the most impactful government initiatives to boost participation in startups in Singapore due to the experiential learning and the growing NOC alumni network.

According to Steve Leonard, CEO of SGInnovate (the Singapore Government's dedicated startup support agency), the NOC program is "one of the most impactful student entrepreneurship programs in the world, and one of the major factors in the palpable transformation to an entrepreneurially-driven economy that is underway in Singapore today."

// Germany

German Valley Week[192] is an annual program that takes 100 entrepreneurs for a week-long trade mission to foster learning and networking in Silicon Valley. The program is organised by the German Startups Association and led by Germany's Federal Minister of Economics and Technology with the stated aim of building a bridge between the startup scenes in Germany and the US.[193,194]

[190] media.economist.com
[191] business.asiaone.com
[192] germanvalleyweek.org
[193] deutsche-startups.com/
[194] siliconallee.com

// A perspective on gender diversity in the startup ecosystem

Contributed by

Nicola Hazell,
Head of Diversity and Impact at BlueChilli

Diversity is the key to unlocking innovation. Diverse views and ideas are essential to drive the kind of disruptive, creative, critical thinking required to take our economy forward. But right now, Australia is at risk of growing a new innovation-economy that fails to tap into the diversity of our population, and in particular, leaves women behind. Women make up more than 50% of our population, yet in the tech startup ecosystem, women remain grossly under-represented. They have the ideas, passion and talent to build and run impactful, scalable tech companies, but too few women are getting started. For those who do, significant barriers remain, including access to investment - despite evidence clearly demonstrating the excellent outcomes of companies with women in leadership.

Addressing the participation gap in tech and entrepreneurship requires a concerted cross-sector effort at many points along the pipeline. Government has a key role to play, not only through direct investment in scaling programs that engage, support and champion women, but also through the design of government policies and initiatives intended to support the broader innovation economy.

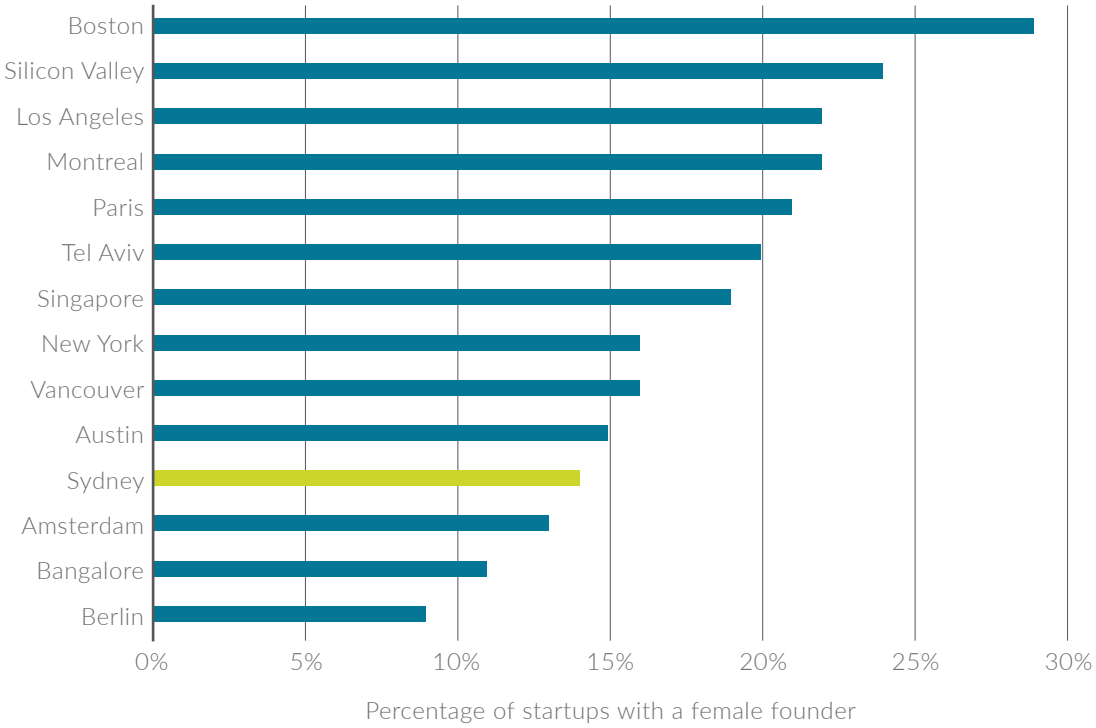
For example, there is a real opportunity to make a direct impact on the gender gap by ensuring programs within the NISA aimed at growing the startup ecosystem in general take a proactive approach to gender equality. By requiring all applicants for government funding to demonstrate a 'non-negotiable' approach to female participation and inclusive design in their programs or activities, government can ensure the significant investment in innovation results in a more diverse (and thriving) startup ecosystem.

Without intentional design for diversity, the startup and innovation economy will remain an uneven playing field - creating a huge missed opportunity for our national prosperity and global competitiveness. The ideas and perspectives of female entrepreneurs and innovators offer vital opportunities for the development of new products, services and creative solutions to major global problems. As the government looks for ways to create a more inclusive innovation agenda, driving gender equality must be embedded as the central plank of the national strategy.

// The importance of diversity

According to the Compass Report on Global Startup Ecosystems, the proportion of startups with a female founder has increased globally by 80% over the last three years from 10% in 2012 to 18% in 2015. The same report shows that in Sydney the percentage of startups with a female founder is currently 14%, and according to BlueChilli less than 5% of all funded tech startups in Australia have a female founder.[195] A StartupAUS / UTS analysis of nearly 50 of Australia's most successful startups founded since 2003 showed that 17% of them had at least one female founder, with only 4% exclusively founded by women.

Figure 10: Total angel investment per capita – selected countries, latest available data [196]



"Stanford, at the heart of Silicon Valley, now boasts Computer Science as the most popular major for female students."

[195] bluechilli.com
[196] Compass Report on Global Startup Ecosystems (2015)

Gender balance is a major issue in the IT industry, with women comprising only 28% of IT workers, and although some improvements have been seen in recent years, the startup ecosystem has a long way to go to achieve gender diversity.

The arguments for achieving gender diversity in the startup ecosystem are not just about equity, but also about tapping into an under-utilised and under-valued talent pool. According to the Australian Computer Society, addressing the gender balance in the IT workforce could boost Australia's GDP by 11%.[197]

A similar challenge exists in many countries, and is being addressed through initiatives such as the European Commission's creation of an online mentoring, advisory, educational and business networking platform for women entrepreneurs.[198]

Stanford, at the heart of Silicon Valley, now boasts Computer Science as the most popular major for female students.[199]

The National Innovation and Science Agenda contains a commitment to investing $13 million over five years to encourage more women in STEM related careers through various initiatives (such as SAGE and 'Male Champions of Change') and partnerships with the private sector. StartupAUS strongly endorses the government's commitment to addressing the current gender imbalance, and encourages the government to embed gender diversity in the design of all programs to ensure they achieve their aims whilst at the same time helping to move the Australian tech sector toward greater gender diversity.

[197] startupsmart.com.au
[198] eur-lex.europa.eu
[199] reuters.com

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StartupAUS wishes to thank the following individuals and organisations who directly contributed to the writing of or thinking behind this report:

Adelaide City Council
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AirTree Ventures
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Anfeng He
Shaun Cartoon
Valeska Bloch

AppBot
Claire McGregor

Australian Institute for Innovation
Paul Cheever

AVCAL
Christian Gergis
Kosta Sinelnikov
Yasser El-Ansary

BillCap
Yann Burden

Blackbird Ventures
Niki Scevak

BlueChilli
Nicola Hazell
Sebastien Eckersley-Maslin

Boundlss
Jonah Cacioppe

CareerJanet
Janet Matta

CBR Innovation Network
Sarah Pearson

Cisco Australia
Malcolm Thornton

CloudPeeps
Kate Kendall

Creative Enterprise Australia
Anna Rooke

Data61
Adrian Turner

Expert360
Bridget Loudon

Fishburners
Murray Hurps

Freelancer
Matt Barrie

Google Australia
Alex Lynch
Sally-Ann Williams

Handshake
Michael Elmgreen

HealthEngine
Marcus Tan

Jemsoft
Jordan Green

KPMG
Dani Sfameni
Georgia King-Siem
James Mabbott
Jehan Kanga
Tricia Liew

Launch Group
Fleur Brown
Louise Proctor

Local Measure
Jonathan Barouch

MIBD Strategy
Marc Itzchak

Microsoft Australia
Belinda Dennett

Rampersand
Jim Cassidy

RangeMe
Darryl Jackson

Redbubble
Barry Newstead

River City Labs
Peta Ellis

Square Peg Capital
Paul Bassat

StartupAUS
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Alex Gruszka
Alex McCauley
Andrew Larsen
Bill Bartee
Colin Kinner
Glenn Smith
Kate Dezarnaulds
Peter Bradd
Teresa Engelhard
Topaz Conway
Wayne Gerard

Startup Daily
Mat Beeche

Startup Muster
Monica Wulff

Startup Tasmania
James Riggall

Startup Victoria
Georgia Beattie
Scott Handsaker

StorReduce
Vanessa Wilson

Tech Street Journal
Chris Woods

TechSydney
Dean McEvoy
Kim Heras

StartupAUS also wishes to thank the many startup founders and other members of the national startup community who provided their input to this report.

We spoke to hundreds of startup founders and employees around the country, including:

Tony Anstatt
Andrew Austin
Rohit Bhargava
Adam Bowcutt
Ken Chan
Ben Colley
Beau Corazon
Rod Cuthbert
Kathryn Dodd
Michaela Epstein
Joel Gabauer
Hamed Ghajarnia
Linda Graham-McCann
Rowan Grant
Terry Hilsberg
Daniel Holmes
Michael Holzer
Peter Humphreys
Jamie Hyndman
Lisa Jenkinson
Stefan Knight
Peter Laurie
Raena Lea-Shannon
Anthony Lieu
Chew Lim
Kim Chandler McDonald
Scott McNaught
Nathan Murphy
Geoff Nix
Luis Osorio
Ricky Robinson
Darren Rogan
Scott Rogers
Matthew Rowan
Chris Rozic
Richard Shannon
David Shaw
Matt Tomlins
Anne-Marie Walton

We would also like to sincerely thank our generous sponsors, without whom a publication on this scale would not have been possible.

Thanks to:

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Blackbird VC
Cisco
Fishburners
Inspire9
Microsoft
River City Labs
Shortpress
Telstra

// Report design & art direction

Chris Brown - Freelance Design
www.imchrisbrown.co.uk

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ISBN 9780995429109

34995 >

9 780995 429109 AU$49.95