INNOVATION IN AUSTRALIA

BUILDING A PROSPEROUS FUTURE THROUGH INNOVATION IN AUSTRALIA

DISCUSSION PAPER BY

SR Swanson Reed
Specialist R&D Tax Advisors

WRAYS
Intellectual Property

EXECUTIVE SUMMARY

innovationCAFE is a series of national workshops hosted by Swanson Reed and Wrays to investigate and better understand the opinions of industry leaders. Common themes highlighted in innovationCAFE created an important starting point for an ongoing discussion about building a prosperous future through innovation in Australia. This paper will report on the findings and was originally going to be the first in a two part series. The second paper was intended to suggest a framework for continuing to build an economy that is innovation-led, based on feedback from the workshops. However, following the Government's mini economic summit in September, a major 'Innovation Statement' is planned for release before the end of the year. This paper will be provided to key Government representatives to assist in their deliberations if needed.

From the topics discussed during the innovationCAFE sessions, the most common themes raised by attendees were leadership, education, funding, regulatory incentives, collaboration and networks. Hence, these are the key areas discussed in this paper. However, to reflect possible Government changes, the second paper will not be drafted until after the 'Innovation Statement' is released in December.

Whilst Australia's economic outlook and perceived capabilities are relatively strong, when investigating each issue further there are a number of underlying critical issues which need to be addressed. In specific, an unfavourable financial and regulatory environment that pushes innovators overseas, a large collaboration gap between industry and university which fails to connect research to commercial outcomes, and in recent years, warning signs that our education system needs to embrace innovation to remain competitive.

The government must play a key leadership role in combatting these issues, by developing and implementing clear, constructive and detailed policies in the areas of education, innovation and technology. Furthermore, such policies need to be adequately funded. With approximately 86% of the workforce employed within the services sector, there is a perceived need to increase investment in high skill areas, such as innovation and R&D[1]. Driving economic growth through innovation will be the major counterbalance to issues associated with ageing populations, climate change and rising income inequality.

WHAT IS INNOVATIONCAFE?

To become an innovation-led economy and sustain a prosperous future for Australia, three interrelated sub-structures, or 'pillars', need to be aligned; culture, commercialisation and productivity. In relation to this, Swanson Reed and Wrays jointly facilitated four innovation café workshops in Brisbane, Sydney, Melbourne and Perth in July and August 2015.

Leaders from industry, academia and government were invited to speak on each pillar and hold an interactive discussion with the audience to discuss the opportunities and pitfalls in each pillar. On conclusion of the series, the thoughts and ideas of the 250 audience participants were captured, collated and reviewed. The analysis of that feedback forms the basis of this paper.

The Three Pillars

I. Culture

Culture is an essential foundation for innovation and was the second most commented theme at innovationCAFE 2015. In reference to this, Professor Robert Clancy AM noted in the Sydney workshop that, "complacency is a major issue." This is reinforced by fact that the Organisation for Economic Co-operation and Development (OECD) ranked Australia the lowest out of the 25 countries measured for 'level of public sector support to innovating firms'. Workplace culture must also adapt to encourage learning, allow failure and support innovators. Furthermore, the gap between our top performers and low performers is widening. Initiatives in the United Kingdom reveal how Government leadership and commitment to innovation engenders confidence to attract talent. Australia should follow this lead in encouraging and rewarding innovation.

II. Commercialisation

Forming a national vision and innovation culture may be the first step, but it will need to be supported by genuine measures, aimed at enabling innovation-minded businesses to develop ideas and bring them to market. Funding was amongst one of the most common issues from the innovationCAFE events. This is consistent with the Australian Innovation System Report 2014, where access to funds was the most commonly identified barrier to innovation in Australia[2]. A lack of a favourable commercialisation environment has seen a string of high profile start-ups leave Australian shores. Examples mentioned include Atlassian (moved to the UK; valued at US$3.3billion) and Nitro (relocated to San Francisco; 2013 turnover $25 million).

The government again plays a key role in enticing and encouraging start-ups through better tax and regulatory support. These include policies such as, flexible visa options, R&D tax incentives and the patent box scheme. The patent box is currently not active in Australia, but has been successfully operating in countries such as the UK, Belgium, Luxembourg and the Netherlands. All of these policies are intended to promote and reward the attraction and retention of innovative talent and businesses to Australia.

III. Productivity

Key issues of concern that were commonly raised by attendees at the innovationCAFE events were a perceived lack of communication, connection, structure, collaboration and pathways between government, universities and industry. As innovationCAFE speaker Paul Jensen pointed out at the Melbourne seminar, "despite Australian universities being highly regarded, Australia is ranked just 29th out of 30 in the OECD in terms of businesses collaborating with universities on innovation". In addition, attendees at the innovationCAFE seminars raised concern over a lack of incubators and hubs for innovative work to be undertaken.

Since Silicon Valley has become the innovation epicentre of the world, it was suggested that enhancing and/or coordinating such hub areas within Australia will help start-up companies source the people and skills required to bring the desired economic benefits. Implementing a "collaborative economy" by linking industry and universities and other parties is, according to a report commissioned by Google, potentially worth $46 billion.

CONTENTS

1. INTRODUCTION

Innovation is crucial to the success of every business. There is strong empirical evidence that innovation has a positive impact on the economy and the competitiveness of Australian businesses[3]. With continuous changes to government policies, legislation and the economy, it is crucial that Australian businesses have a plan for sustainable strategic business development and an innovative approach to staying ahead of the game.

To explore this issue, innovationCAFE conducted a series of 2-hour workshops in a collaborative partnership between Swanson Reed and Wrays, to explore the importance of innovation and its place in a prosperous future for Australia.

DEVELOPING IDEAS

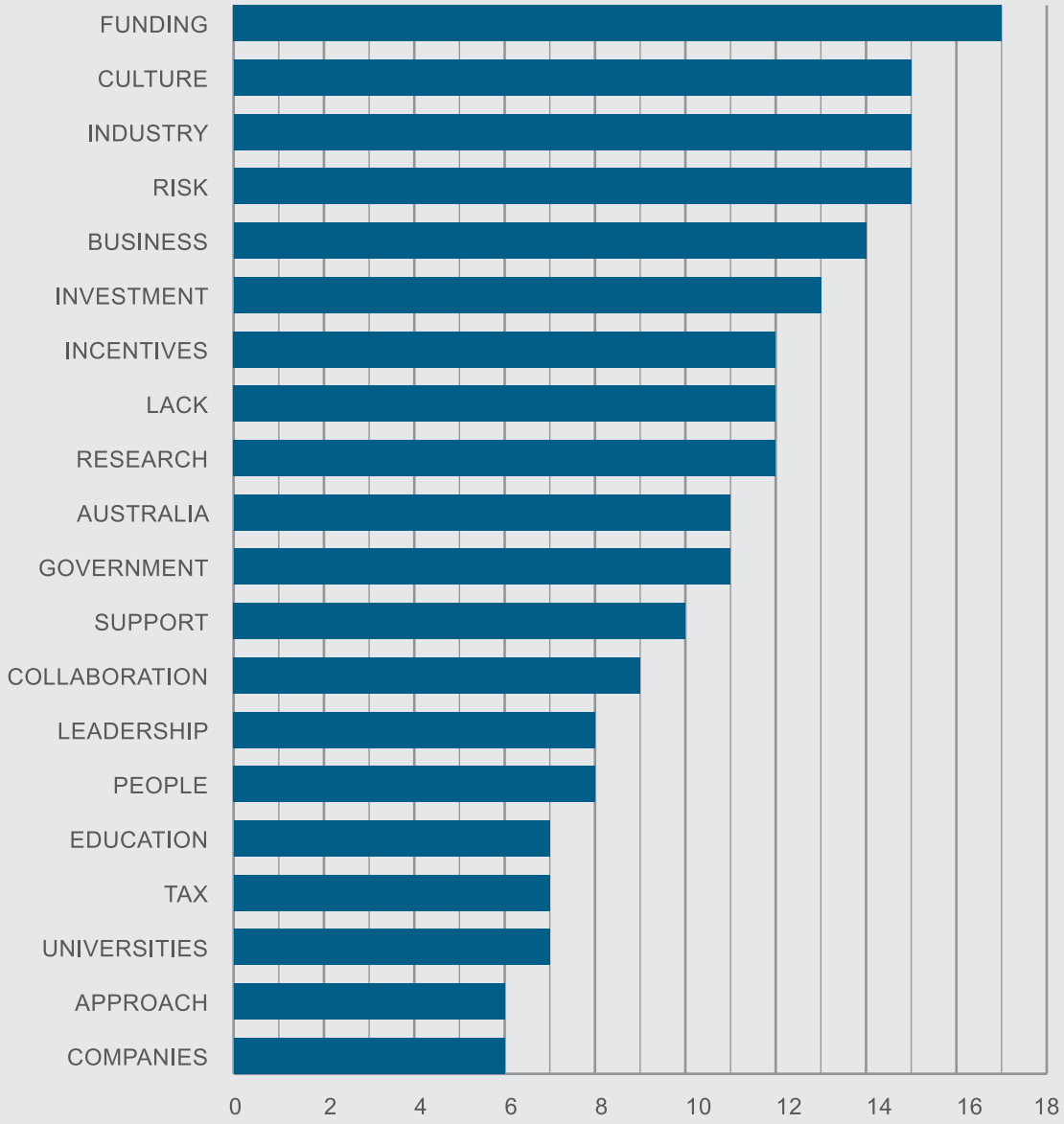
Whilst most business groups, think tanks and governments recognise that innovation is the key to future prosperity, there does not appear to be a debate at the national level as to 'why'. Moreover, there seems to be little national attention on improving the understanding of the link between economic growth and innovation and how these relate to culture, productivity and commercialisation[4]. The innovationCAFE was an initiative that sought to address these questions, enabling particularly the business community and academia to provide direct input into the discussion about innovation in Australia.

Designed as a combination of seminars and workshops, innovationCAFE events were held across four major cities in Australia (Brisbane, Melbourne, Perth and Sydney) during July and August 2015. Over 250 participants attended the workshops. A presenter provided a brief outline of the issues, examples and opportunities in each of the three pillars of innovation[5]. A facilitator then led discussions on each pillar, with a brief to capture participants' comments, views and suggestions, which would help form the foundation of this paper.

innovationCAFE at the Hilton Sydney on 29 July 2015

KEY THEMES

Feedback from attendees was collated and analysed and the key words extracted. Aside from the word ‘innovation’ itself, the most common key words raised/discussed were:



Of the top 20 key words, ‘funding’ was mentioned 17 times out of 155 total tabulated ideas. This indicates that funding - a necessary tool to access the research, development and risk taking required for innovation - was the topic at the forefront for most of the business community represented. The next prevailing (mentioned 15 times) issue raised was culture. This suggests that the business community strongly understands the importance of creating a solid foundation for a national innovation culture throughout all stages – from early education level all the way to government leadership.

Other major themes were investment; tax and incentives; government and leadership; and support and collaboration (most particularly to facilitate connections between universities and companies). Attendees appeared to have a sharp insight into these problems.

2. STATE OF THE AUSTRALIAN ECONOMY

Australia has had 23 years of uninterrupted economic growth at an average annual rate of 3.3 per cent per year. This growth, largely due to mining, has resulted in a generation of young Australians who have never suffered an economic recession and the financial hardship that brings.

During the Brisbane session, Senator Canavan made a point that the key to our ongoing success will be directly related to how well we transition away from our reliance on the mining industry into other areas. This will mean improving our productivity, and making strong long-term investment in areas such as innovation, manufacturing, education and healthcare.

Key economic factors affecting innovation have been highlighted below:

- Australia's recent reliance on the mining boom for economic prosperity
- Australia's reducing reliance in agriculture and manufacturing for economic prosperity
- The economic importance of developing strong and robust industry sectors which complement, supplement or are alternate to the above sectors
- Global completion
- Technological disruptions
- The need to encourage growth and employment in industry sectors where Australia has (or potentially has) strong and sustainable competitive advantages and the appropriate level of flexibility and policies in place to facilitate this
- The current Federal Government's stated focus on creating an "innovative" Australia

In light of the above, there is an urgent need to increase national investment in innovation and intellectual capacity. There is also a need for an improved policy and cultural attitude towards innovation.

If we don't act quickly to develop a plan to support innovation, particularly SME's in the manufacturing sector, business confidence will fall and investment in long-term projects will disappear.

3. ALIGNING THE THREE PILLARS OF INNOVATION

The OECD argues that innovation, skills development and productivity will be the major counterbalance to ageing populations, climate change and rising income inequality during the next 50 years[6]. The Australian Innovation System Report 2014 found positive correlation between innovation and macroeconomic performance, and a link between innovation and productivity[7]. In short, innovative nations thrive more compared to less innovative nations[8].

To become an innovation-led economy and sustain a prosperous future for Australia, we maintain that three interrelated sub-structures, or 'pillars', need to be aligned:

1. If we are to have key stakeholders accept the need for change, this change must be as a key reform to our economy, an agreed national vision. This pillar is culture.
2. Businesses need to have the tools and networks to be able to respond to this national vision and to effectively take innovations to market. This pillar is commercialisation.
3. Finally, we need to remove the impediments to building an innovation-led economy. For example, improving Australia's financing, tax, and regulatory systems to encourage talent to stay onshore and increase foreign direct investment. This is the third pillar, productivity.

PILLAR I - CULTURE

Culture drives governmental policy, business strategy and everyday life decisions. Culture is generally seen as a set of “norms and values” that are strongly shared throughout a group[9], and the right culture is a key requirement to foster innovation[10]. The right culture rewards innovation-seeking behaviours such as opportunity, risk taking, and proactiveness[11]. Unfortunately, a range of recent reports have all reported a moderate to low innovation performance due to a poor business innovation culture in Australia[12]. Without an innovation culture, business strategy or government policy plan in place, Australia will always be met with resistance and be unlikely to suceed[13].

At the innovationCAFE, participants were asked what underlying cultural factors they thought could be inhibiting innovation in Australia. Questions included, “what inhibitors to innovation are there within our economic and political environment?” and “what do State and Federal Governments need to change and/or improve in order to foster innovation?” Culture was a major theme. Suggestions included “develop Silicon Valley culture on the country level, not the state level” and “make innovation part of the education system.”

There was some concern about Australia’s reliance on natural resources (comments included: complacency kills; for Australia, it’s too easy - we make money other ways; there is no fostering of intellect; no national initiative). These ideas are consistent with the 2014 Global Innovation Index report, which noted “countries with no resources base are more innovative because they must rely on innovation to survive”. Australia needs to first change the way we think in order to create a unified national culture that supports and rewards innovation.

Leadership and Attitude

InnovationCAFE attendees felt that the government is traditionally too conservative to foster innovation (“politics is inherently conservative and risk averse”), highlight that industrial relations, tax systems and regularity complexity are key concerns. These views were supported by the fact that, as of 2014, the level of public sector support to innovating firms in Australia was the lowest in the OECD - 25th out of 25 countries measured.

The government is perceived as having a key leadership role in fostering an innovation culture. For example, the UK government established Innovate UK to oversee national innovation. A review finding higher than expected results on one of the board’s projects stated, “This excellent performance is in no small part due to the leadership of Innovate UK [...] in guiding the network to this point and the role it continues to play as the principal funder of the network.” The review further notes that, “The Government’s long term commitment to funding and building this network has also been critical to provide the confidence needed to attract the right talent and to ensure businesses invest themselves through their engagement in projects at the centres”[14]. In an interview with the head of London & Partners, Gordon Innes, success was attributed to “how his agency, the different levels of British government and the country’s tech community were working together to attract entrepreneurs”[15].

Industry leaders and managers also play a crucial role in fostering innovation. In the innovationCAFE seminars, points mentioned included needing a “culture that allows failure” and “employees must be allow to try and fail”. These were on the right track: Research indicates that failure-tolerant leaders help people overcome fear, which results in creating a culture of “intelligent risk-taking” which leads to sustained innovation[16]. The Australian Innovation Systems Report in 2012 found that Australian business management capability and innovation culture remains poor by international standards[17]. The Culturing Success report by Microsoft this year revealed nearly seven out of ten SMEs are failing to reach their full growth potential because of workplace culture hindering innovative ideas[18]. Organisational leaders will play a key role in shaping an internal culture conducive to innovation — a culture that encourages learning, tolerates failure, and supports its innovators[19].

Education

Education was another commonly discussed theme in the innovationCAFE events. It was highlighted that innovation, risk- taking, entrepreneurship and other attitudes could be fostered from an early age. Australia's tertiary education, on the whole, is performing well. In 2014 the Times Higher Education Magazine released its 11th annual World University Rankings which described Australia's university sector as a "world- class system"[20].

However, reports on our early education paint a different picture. For example, in 2003 the Australian Council for Education Research (ACER) noted that Australia had a well performing international comparisons education system at that time, however warned that, "there is no cause for complacency"[21]. By 2012, the Gonski Report found performance of Australian students had declined at all levels of achievement compared to international benchmarks[22]. In 2013 the OECD international education rankings showed that "Australia saw a precipitous fall in its maths ranking, from 15th in 2009 to 19th in 2012"[23]. Moreover, NAPLAN test results from 2009 to 2013 revealed that student achievement stalled across a majority of measures[24]. Hence, these reports suggest more attention does need to be paid in improving primary education systems. The NAPLAN results also revealed that the gap between our top performers and low performers has since increased[25].

In relation to this, innovation should be taught in schools and Australia must innovate how our teaching is conducted too. The Gonski Report said it is not purely a financial matter - it is about strengthening and securing Australia's future. ACER similarly reported back in 2003 that "Sustained innovation is the key to future growth and prosperity in a competitive global economy. Building a culture of continuous innovation through education is an essential requirement, parallel to and supporting research and development"[26].

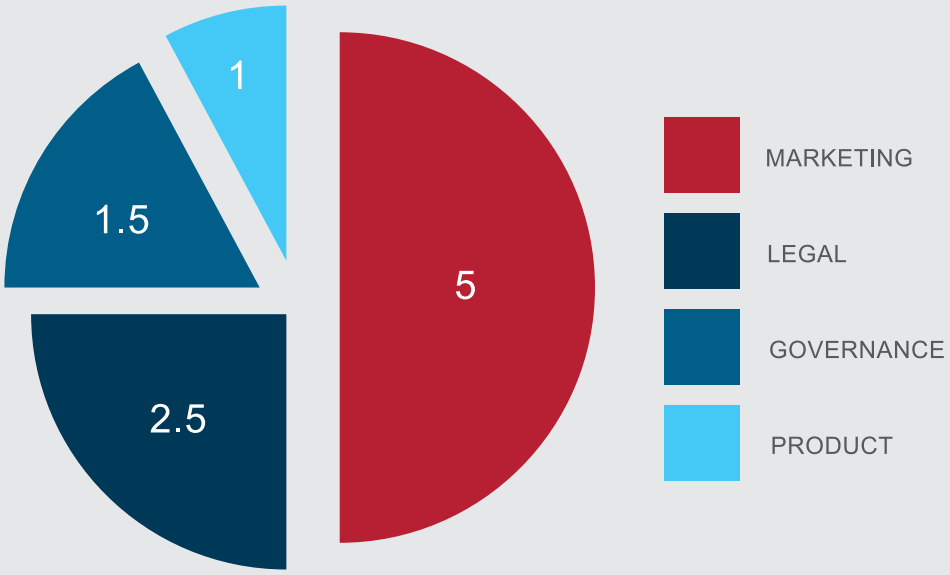
PILLAR II - COMMERCIALISATION

A national vision and innovation culture will need to be supported by appropriate measures that enable innovation-minded businesses to develop ideas and bring them to market. An OECD report of the 29 most innovative countries reveals that our small businesses are much better at innovating. For example, Australian SME manufactures ranked 5th and Australian service SME ranked 7th compared to Australian large firms which ranked 23. However, Australian Bureau of Statistics (ABS) figures show that only 42% of Australian businesses undertook innovative activities in 2012 to 2013[27]. Developing ideas takes time and money and bringing an idea to market can require even more significant financial resources, all of which limits a firm's ability to innovate – especially small firms[28]. As Professor Tim Mazzarol, an innovationCAFE speaker, noted, "for every dollar to develop a product, at least five are needed to get to market." The graph below reveals how the finance needed for commercialisation is divided[29]:

DOLLARS NEEDED FOR COMMERCIALISATION

THE UNIVERSITY OF WESTERN AUSTRALIA

For every dollar needed to take the product foward at least $5 more may be needed to get it into the market



Finding mechanisms, skilled people, appropriate funding and support was a common theme raised in all innovationCAFE seminars. Comments highlighted the need for easier access to capital, the importance of R&D tax concessions, implementation of a patent box regime and the easing of general regulatory burdens. Discussion also included examples of companies that started up in Australia but then relocated their businesses to foreign countries offering better financing, tax and regulatory environments. In addition to seeking retention of such businesses in Australia, consideration also needs to be directed at creating an environment that encourages and attracts international firms to perceive Australia as an innovative hub.

Access to Capital

A lack of financing was regarded by many of the innovationCAFE attendees as a major impediment to innovation. Funding was, in fact, the most mentioned topic. This is consistent with the Australian Innovation System Report 2014, in which access to funds was the most commonly identified barrier to innovation in Australia by 20.3% of all businesses[30]. There are a number of well-reported cases of start-up companies leaving Australia to access better funding and support options. Such occurrences fuel the perception that Australia is not "innovator-friendly". This appears to be particularly so in the tech sector. An example of this is the tech start-up Atlassian, who relocated to the UK due to better tax and regulatory support. Another case is Nitro, which launched in Melbourne in 2005 but is now based in San Francisco. Nitro co-founder Sam Chandler stated that, "many start-ups who have big ambitions have no choice but to leave Australia because the mid to later stage funding options simply aren't available"[31]. Furthermore, Ollo Wearables left Australia in order to gain funding overseas in the USA. The CEO said that limited funding channels impacted his decision, "the pool of available venture capital dollars is tiny and this is not a problem that can be solved merely by making more money available. Without very specific, professional and niche investment skills, those dollars are not going to end up in the right place or be adequately leveraged"[32].

Regulatory incentives

In addition to access to funding and support, the government also plays a key role in encouraging innovation through better tax and regulatory systems. Issues of particular concern, especially for start-up companies, included the comparative cost ("wages, compliance, tax and even software costs are high") of doing business in Australia. As a report on Business Review Weekly claims, "Australia risks missing out on the digital investment boom as local technology companies increasingly move their operations overseas in search of better regulatory incentives"[33].

As the policy maker, the government plays a critical role in creating and fostering an innovative culture, but such policies and any associated incentives must be carefully planned. The OECD noted that government incentives increase innovation but require long-term commitment: "The available evidence shows that R&D tax incentives do increase business expenditure on R&D, with the effects typically being larger in the long run than in the short run"[34].

Despite this, since 2011, the government has proposed two policy reversals:

(i) exclusion for large companies with a turnover over $20 Billion; and
(ii) a 1.5% decrease to the refundable and non-refundable R&D tax offsets.

The OECD warns, "for countries that have experienced a large number of R&D tax policy reversals, the impact of R&D tax credits on private R&D expenditure is greatly diminished"[35] [36]. This emphasis is not only the need for commitment, but for careful planning and collaboration. In the UK the government launched regulatory changes such as Entrepreneur Visas and changes to employee share options tax. Britain ranked second in the Global Innovation Index due to its patent-box legislation that allows intellectual property profits assets to be concessionally taxed. In the Netherlands, a Top Sectors program introduced a tax credit system to support innovating companies by compensating part of its labour costs[37]. In Switzerland, its open immigration policy has helped it to enjoy first position in the Global Innovation Index for four years[38]. In the USA, the OECD's testimony to the Senate Committee on Finance said that, alongside access to networks, "the evidence suggests that the decisions of companies, especially multinational enterprises, to conduct R&D in a certain country are certainly influenced by the availability of tax incentives." These areas should be investigated in Australia to avoid start-up companies departing overseas for better tax and regulatory options.

PILLAR III – PRODUCTIVITY

Australia needs both the will and the tools to be able to respond to a national vision of innovation. Speakers and attendees at the innovationCAFE workshops noted that, compared to Australia, a number of countries - including those without a surplus of natural resources - are highly innovative. Issues raised included the need for "systems and cultures that value industry/university collaboration" and the need to "enhance collaboration through diversity". There was also a perceived lack of networks and collaboration pathways, an absence of incubators between industry and science (a "lack of collaboration hubs"). According to the Global Innovation Index 2014, Australia ranked 17th in a comparison of countries which best innovate. However, majority of the countries ranked above Australia, except two, had no significant natural resources. Global Innovation Index co-editor Bruno Lanvin reveals this is because, "countries with no resources base rely on innovation to survive; that creates a mindset and a focus that is crucial"[39].

Collaboration

Collaboration is important. ACER's 2003 report states, "Difficulties surrounding [innovation] should be resolved by teacher employers, schools, universities and governments in partnership"[40]. Schools and universities can collaborate with companies and improve the work readiness and employability of graduates[41]. However, a commonly raised issue in the innovationCAFE events was a perceived lack of communication, connection, structure, collaboration or pathways between government, regulators, universities, industry and incubators. These concerns seemed valid - according to the Innovation System Report 2014, Australia has one of the weakest levels of networking and collaborative innovation among OECD countries[42]. In 2013, Ian Macfarlane the Minister for Industry said, "If there is a failing in Australia that is graphic, it is the lack of collaboration"[43]. Professor Paul Jensen in his innovationCAFE presentation commented that, despite Australian universities being highly regarded, Australia ranks just 29th out of 30 in the OECD in terms of the proportion of businesses collaborating with universities on innovation[44].

Addressing such a gap should see significant productivity gains. Renee Hindmarsh from the Australian Technology Network of Universities (ATN) said "It shows the pressing need for much better collaboration between the research sector and industry […] Otherwise public expenditure ends up being prioritised in areas that are detached from the innovation needs of end users in industry and the community." As a result, almost a third of R&D expenditure in higher education is in medical and health research, yet very few Australian companies take medical innovations to market globally. While such research is undoubtedly important, there needs to be additional investment into industries where Australia has competitive advantage in order to facilitate greater economic strength and secure a prosperous future. A report commissioned by Google indicated the value of the "collaborative economy" in Australia to potentially be worth $46 billion[45].

The government also plays an important role in facilitating collaboration by reforming policy and introducing systemic changes[46]. An example of Government action is Britain's Innovate UK Catapult program, which launched 7 technology and innovation centres for UK businesses, scientists and engineers to work together on research and development. This initiative was to "close the gap between universities and industry through a translational infrastructure"[47]. A 2014 review of the network determined that "businesses and academics have praised the Catapult centres as a "neutral" convener, the place where collaboration across the technology readiness levels can take place effortlessly." A common idea raised throughout the innovationCAFE series was to increase the R&D Tax Incentive base amount to companies that directly engage the services of universities and other Research Service Providers (RSPs).

Networks

For businesses, it is said that superior innovation can be found through collaboration between diverse parties[48]. Sharing of ideas, expertise and resources fosters innovation[49]. The OECD's testimony to the US Senate Committee on Finance suggested that while tax incentives influence investment decisions, so do "access to local science and technology, proximity to university research and centres of excellence, availability of a skilled workforce, including engineers and scientists, and strong intellectual property rights"[50] [51].

Many successful Australian start-up companies have commented on the lack of entrepreneurial support networks. Alan Dowie, founder of start-up Macropod, commented "The biggest challenge in Australia is that the startup community is really not very tightly knit. There's no Palo Alto or Mountain View here." He further noted, "it takes a serious amount of hustle to find where all that money is hiding...there's no Sandhill Road here either. You'll need to shake a lot of hands and buy a lot of coffee to get anywhere"[52]. The CEO of Ollo Wearables similarly noted that they left Australia due to funding issues and lack of networks, "[Ollo] couldn't find people who understood what it was trying to do, and who had the skills to help it do it"[53]. Improving networks through hubs, incubators and other systems is an important pathway to enhancing our innovation productivity.

4. RECOMMENDATIONS AND NEXT STEPS

It is recognised that business, academia, entrepreneurs and venture capital all have a significant role to play if we are to build a truly innovative country. However, it is up to government to put the key elements in place to start the process of aligning the three pillars of innovation. They need to plan and incentivise our future based on an innovation-led economy. This vision needs to be a long-term bi-partisan commitment, one not held hostage to political, economic and commodity cycles.

Better tax and regulatory systems are needed to foster an environment for innovation. These include:

- Easing of general regulatory burdens and greater access to capital
- A stable R&D tax incentive and taxation system
- Incentives for companies that directly engage with universities and RSPs
- Adequate exploration of U.K style patent box adaption
- Exploration of the entrepreneur visas
- Changes to employee share options tax which will encourage start-up companies to retain operations in the Australia

In addition, Australia should look to the UK and its success with the Innovate UK model, which has demonstrated a capacity to grow an innovative culture through fostering success in education and raising awareness. This model has gone on to build a culture and framework needed to attract the right talent, improving failure tolerance in leaders and improving business confidence in investing. The model, through use of innovation hubs, has also proven successful in building a translational infrastructure to increase collaboration between the university and commercial sectors.

This paper concentrates primarily on the requirements needed to build an innovation-led economy and the hurdles currently in place limiting this. A second paper was planned as part of this series that was intended to address the issue of how to build the framework to do so. It is pleasing to note the Federal Government appears to have ‘changed course’ and are now putting innovation as a central plank in their industry policy. An ‘Innovation Statement’ has been promised before the end of this year, which is one of the outcomes of a mini-economic conference held in September 2015. The intention is to now await the publication of this statement before commenting on the framework. With this in mind, the 2016 innovationCAFE may look at how the industry can leverage the proposed Government initiatives by aligning the three pillars at the micro level.

SPEAKERS ACKNOWLEDGMENT

Wrays and Swanson Reed would like to acknowledge the below innovationCAFE speakers for their contributions to the 2015 series:

- Professor Paul Jenson, UniMelb
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- John Langoulant, AO
- Nick Coplin, Orbital Corporation
- Professor Tim Mazzarol, UWA
- Dr Marco Baccanti, SA Health
- Dr Phil Kearney, Merck
- Professor Robert Clancy, AM
- Barry Thomas, Cook Medical
- John Knight, Business Depot
- Senator Matthew Canavan

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SR Swanson Reed
Specialist R&D Tax Advisors

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