

A VISION FOR AUSTRALIA SPACES OF AUSTRALIAN INNOVATION

GAP 7th Annual Economic Summit

NSW Parliament House
Sydney, 15-16 September 2016



Australian Government



CHARTERED ACCOUNTANTS
AUSTRALIA • NEW ZEALAND





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INTRODUCTION

Encouraging innovation by nurturing spaces for creativity and engagement was the theme of Global Access Partners 7th Annual Economic Summit.

'*Spaces of Australian Innovation*', held at NSW Parliament House on 15th and 16th September 2016, revealed major opportunities in the burgeoning commercial space industry and called for an ambitious, inspiring and bipartisan vision to shape Australian innovation. Delegates supported the launch of new physical and virtual spaces for collaboration, the removal of cultural and systemic barriers to business growth, and university reform to meet new demands in a digital age. The Summit backed the creation of a national space agency, support for young talent and the embrace of novel approaches to improve agility.

The Summit welcomed federal and state politicians, business leaders, academics and social commentators. Delegates heard speeches by [the Hon. Christopher Pyne MP](#), Minister for Defence Industry, Australian Government, [the Hon. Anthony Roberts MP](#), NSW Minister for Industry, Resources and Energy, and [Ms Lucy Turnbull AO](#), Chief Commissioner, Greater Sydney Commission. The Prime Minister of Australia, [the Hon. Malcolm Turnbull MP](#), attended the Summit's Opening Dinner, while the plenary sessions were chaired and facilitated by [the Hon. Philip Ruddock](#) and [the Hon. Stephen Conroy MP](#).

[The Hon. Greg Hunt MP](#), Minister for Industry, Innovation and Science, wrote a letter of welcome to Summit delegates, in which he highlighted the Government's commitment to support research and experimental development with a \$10.1 billion investment in 2016-2017.

Keynote presentations and blogs by Summit speakers and delegates are available at openforum.com.au/spaces-of-australian-innovation-discussion-forum

As part of the Summit's programme, delegates enjoyed project demonstrations by Young ICT Explorers¹, DICE Kids², Space Connect³, Strategy.Zero⁴, Saber Astronautics⁵ and Cuberider⁶.

About the GAP Annual Economic Summit

A Vision for Australia (formerly the *National Economic Review*) is an annual Summit designed to lead the national debate on productivity, infrastructure, innovation, employment, education and growth. Its parliamentary format encourages open and constructive dialogue and offers unique networking opportunities for its speakers, delegates and international guests.

Each Summit's theme is informed by the taskforces and stakeholder consultations run by GAP during the year. Previous Summits focused on Innovation (2010), Population (2011), Productivity (2012), Agriculture (2013), Education (2014) and the Future of Jobs (2015).

The reports of proceedings can be reviewed at globalaccesspartners.org/think-tanks/growth-summit.



EXECUTIVE SUMMARY

Economic Imperative

Innovation is the engine of economic growth and, although progress has been made, Australia must rise to the challenge of ever-accelerating technological and economic change. A lack of self-confidence and a range of cultural and systemic barriers must be addressed and greater opportunities given to young people. Summit delegates discussed strategies and offered recommendations to build a more innovative nation, which GAP taskforces will now progress to maximise their economic impact.

'Coffee House' Innovation

Although technology can overcome the 'tyranny of distance', knowledge economies **thrive on the physical agglomeration of human resources**. The creation of new physical and virtual spaces for collaboration and interaction in Sydney will empower the new knowledge economy, just as the coffee shops of 17th-century London fostered mercantile growth. These spaces must be open to all to harness the vitality of Sydney's ever-more diverse population.

University Reform

Australian universities must reform in the face of **digital competition and changing expectations and needs**. Micro-courses, MOOCs and peer-to-peer learning will increasingly supplement traditional lectures at 'bricks and mortar' institutions. This will help more young Australians from disadvantaged backgrounds access tertiary education at reasonable cost. Collaboration between universities and industry will support the

innovation agenda, but sustained engagement is required from both sides.

Defence

The nation's defence industry offers major opportunities for innovation and exports.

The Commonwealth is investing \$195 billion in maritime defence and cyber security in the face of growing regional threats over the next decade. Rather than import 'off the shelf' defence solutions from the USA and Europe, Australia can now become a major exporter of military equipment and related technology.

Space & Satellites

Australia should develop a **domestic satellite and space industry**. Orbital communications and data underpin the modern world, yet Australia remains reliant on overseas hardware. The creation of a national space agency and associate membership of the European Space Agency could kick-start the country's embryonic CubeSat manufacturing capacity before the International Astronautical Congress in September 2017.

A Mindset Change

People's mindsets must change as underlying values and attitudes drive every decision and investment. Retaining a beginner's mentality, keeping an open mind and embracing a range of goals rather than trade-offs will foster more creative results. A focus on *why* innovation is important, as well as *what* should be done, will increase public support for the Government's innovation agenda.



STEM Curriculum

Australia must encourage its children's entrepreneurial and STEM⁷ skills.

Business schemes, such as DICE Kids and Club Kidpreneur, and STEM offerings, including Young ICT Explorers and Cuberider, encourage children's imagination and capacities. These schemes should be taken to more schools and their approaches integrated across the whole curriculum. Ongoing links between young people and mentoring and financial services should then help turn their passion into products.

A Vision for Australia

An ambitious, inspiring, bipartisan vision for the nation – perhaps to lead the world towards a zero-carbon economy – could unite and galvanise the Australian innovation effort, just as the Apollo programme spurred technological advance in the USA. Generous tax breaks to foreign-owned R&D centres could attract global talent and investment to nourish the innovation ecosystem.

Smart Cities as Innovation Hubs

Sydney can build on its strengths to become a global innovation hub. This model, informed by the success of other cities around the world, could then be applied across Australia, but the effort must involve the whole community to succeed. Australia should 'think like a big country' and promote its talents, business opportunities and natural advantages as one of the best places in the world to live.

Entrepreneurship

Start-ups succeed through speedy execution, personal empowerment and a tolerance for failure. Good ideas will receive funding, but while governments should reduce red tape and modernise their own procedures, companies should not expect the government to embrace more risk than they are willing to face themselves.

Cultural Shift

The cultural shift to fresh thinking and agility should be embraced by Summit participants, as much as business leaders, political figures and the wider community, for progress to be made. Change is not painless, but if innovation improves people's lives and aligns with traditional Australian values, then it will be welcomed and will help secure future prosperity for all.



OUTCOMES

Global Access Partners will coordinate a number of projects to ensure the Summit's long-term impact on public policy. These include facilitated stakeholder engagement, online discussions through Open Forum and further consultations and research.

GAP's programme in 2017 will include the following advisory groups and taskforces to progress ideas raised at the Summit and implement its recommendations:

A Vision for Australia

The absence of a bold and ambitious national vision to galvanise Australia's innovation efforts towards a worthwhile cause and encourage a culture of change was raised by several Summit speakers. GAP will continue to develop fresh policy approaches to topical issues through its multidisciplinary, bipartisan "Second Track" process. Two informal consultative groups facilitated by GAP, **The Vision for Australia Advisory** and **The Council**, bring together high achievers from diverse backgrounds to identify areas where Australia could improve its performance. The Council includes business leaders from the USA, Israel, Germany, Sweden and Turkey, while GAP's *Vision for Australia* project aims to mobilise civil society to enrich debate, achieve results and inspire action.

Space Tiger

Andrea Boyd, an ISS mission controller at the European Space Agency, inspired Summit attendees with her call for Australia to grasp the fast-growing commercial opportunities in satellite

services. GAP has now assembled a **Space Tiger** team to lead an *Australian Space Initiative*. The team includes Dr Andrew Thomas AO, the Australian-born four-time shuttle astronaut, and Prof Gregory Chamitoff, who spent 199 days aboard the ISS, alongside influential Australian and international scientists, innovators, financial analysts and legal experts. Space Tiger will guide investment, encourage collaboration and help coordinate existing resources. The creation of a national space agency would formalise international relations, establish Australia's credibility and encourage participation in global supply chains.

Sydney as an Innovation Hub

Lucy Turnbull AO set the tone for the Summit in her keynote address by relating the historical importance of 17th-century London coffee houses to the modern knowledge economy in Sydney today. Her insight was cited and reinforced by many subsequent speakers, with one presenter calling the GAP Summit in the NSW Legislative Assembly Chamber 'the ultimate coffee shop'. GAP will continue to promote 'coffee-house innovation and culture' through its **Sydney as an Innovation Hub** taskforce in partnership with PricewaterhouseCoopers (PwC) and the **Leadership in Innovation Advisory**. The taskforce is producing a strategic plan for Sydney to become a global centre of innovation, with plans to expand and roll out its model across Australia.



Innovation Policy

Policy proposals produced by the Summit will be developed by GAP's **Leadership in Innovation Advisory**—a cross-sectoral group of senior executives from government, industry and academia established in 2015. The Advisory is working on several themes, including **the Sharing Economy** with the Insurance Australia Group and **Courage in the Public Service** in partnership with the Department of Employment.

Leadership in Education

This Advisory has worked since 2013 to address the challenges posed by technological disruption, rising costs and evolving expectations. The group includes vice-chancellors, leading academics, businesspeople and senior public servants and operates as an informal advisory body to the Department of Education. In response to the Summit's calls to improve STEM and entrepreneurship in Australian schools and encourage creative thinking and problem solving across the entire curriculum, the **Leadership in Education Advisory** will oversee a number of projects in 2017, including:

- *Digital University*—focusing on modern methods of education delivery, flexible content, easy accessibility and, above all, relevance to today's job market;
- *National STEM Investigations*—assisting the Government in the coordination and delivery of STEM education in schools, inspired by examples such as Young ICT Explorers and Cuberider, to ensure school and university graduates have the skills which modern growth industries demand;

- *Early Childhood Education*—implementing the recommendations of the 2016 GAP Taskforce on Early Childhood Education⁸ to use current government funding more effectively to improve social and economic outcomes for vulnerable children and the broader community.

Defence & Cyber Security

Influenced by the Summit's discussions, the GAP 2017 programme on *Security and Risk* will focus on defence and threats in cyberspace. A new **Taskforce on Cyber Security**, launched in October 2016, will encourage greater collaboration to combat criminal and espionage threats to Australian businesses online. It will assess the nature and extent of cybercrime in Australia and produce strategies to improve education, prevention and resilience. Another high-level GAP consultancy will explore opportunities for innovation and exports in the Australian defence industry in the light of major Commonwealth investments.

Energy & The Environment

Environmental reform was offered at the Summit as the overriding challenge Australia must face, while a bold vision for the nation to become a world leader in renewable power and energy efficiency by 2030 could drive domestic policies towards a single, worthwhile goal. GAP has been advocating a low-carbon future for Australia since its 2009 Low-Carbon Economy Taskforce Report⁹. The **National Standing Committee on Energy and the Environment** now works with the NSW



Department of Industry to improve energy generation, distribution and security. The group encourages the integration of new technologies and fresh thinking into infrastructure development to improve energy security and environmental sustainability.

Health

The Summit agreed that 'soft infrastructure' such as health and, in particular, the mental health of all Australians is crucially important to the country's ongoing social, environmental and economic success. GAP's health projects are coordinated by the **Australian National Consultative Committee on Health**. In November 2016, a GAP taskforce released a report on public healthcare procurement¹⁰, while a new "Second Track" project on hospital funding with the Federal Department of Health is considering the proposed Commonwealth Hospital Benefit¹¹ as a new funding model for all hospital treatments and procedures. The health benefits of work and the need for early intervention to improve returns after injury have been stressed by the **GAP Taskforce on Productive Ageing**. Supported by the NSW and Australian Governments, the Taskforce will broaden its scope in 2017 to tackle ageism in recruiting practices and the underemployment of older Australians.

Mid-Sized Business & Scale-Ups

Mid-sized businesses drive economic growth and innovation in successful economies around the world, and Australia must embrace and promote the value of its mid-sized enterprises. For over a decade, GAP has advanced the interests of mid-sized businesses through research and online platforms such as *First 5000*. In 2016, it established the **Medium Enterprise Advisory** to examine the educational, technological and policy settings that facilitate or hinder the transition from small and start-up to medium business. The Advisory will continue its deliberations through 2017 to develop a case for the proposed Institute for Medium-Sized Enterprises ("**Growth Institute**"). The Institute would provide leadership and support for the sector which, until now, has been largely disconnected and disengaged from the policy process. The work of the Advisory will culminate in the 8th GAP Annual Economic Summit which next year will focus on "**Mid-Sized Business, Scale-Ups and Australia's Productivity**". The Summit will showcase the contributions by GAP taskforces and national consultative committees and offer delegates an opportunity to share their own views and ideas.

ACKNOWLEDGEMENTS



Host

The Hon. Anthony Roberts MP,
NSW Minister for Industry, Resources and Energy

Sponsors

Chartered Accountants Australia & New Zealand
Cognizant Technology Solutions
Department of Employment, Australian Government
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Edith Cowan University and the ECU-Emirates Centre of Aviation & Security Studies in Dubai
Gravity Consulting
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Summit Steering Committee

Peter Fritz AM, the Hon. Philip Ruddock, Peter Dunne, Tia Manettas,
Dr John Burgin, Lisa Cameron, Prof James Guthrie, Stephen Hayes MBE,
Rose Verspaandonk, Dr Melis Senova, Prof Nara Srinivasan, Tanya Stoianoff,
David Redhill, Time Kane, Sean Innis, Philip Brown, Geraint Hudson, Alok Ralhan

Global Access Partners (GAP)

Catherine Fritz-Kalish, Olga Bodrova, Edyta Wiatr, Emma Johnson,
Svetlana Stankovic, Roulla Yiacoumi



PROCEEDINGS

DAY ONE - Thursday, 15 September 2016

OPENING DINNER

“Spaces of Australian Innovation”

Ms Catherine Fritz-Kalish
Co-Founder & Managing Director
Global Access Partners



Catherine Fritz-Kalish welcomed attendees and thanked the young foyer exhibitors for their inspiring displays. Global Access Partners' Annual Summit examines a different topic every year, and innovation was initially selected as an issue which business, government and academia could collaborate on. As the term has become a buzz word with little intrinsic meaning, the 2016 Summit will offer context through the concept of 'Spaces of Australian Innovation'. Speakers will discuss the physical, virtual and cultural 'head space' required to facilitate creativity and consider how an Australian space industry could become a driving force of innovation.

Ms Fritz-Kalish thanked the steering committee for its work and stressed that the Summit marked the start, rather than culmination, of the GAP process. GAP Summits initiate taskforces to implement solutions and maximise Australia's potential. 600 people now work on GAP initiatives examining cyber security, innovation in Sydney, hospital funding, productive ageing and other issues. The 2016 Summit will discuss options, offer recommendations and assign responsibilities to build a more innovative nation which GAP taskforces will progress.

Ms Fritz-Kalish invited participants to raise problems which affect them personally and to speak freely under the Chatham House rule of non-attribution. She thanked NSW Minister Anthony Roberts MP for his long-standing support of GAP and paid tribute to the speakers, Lucy Turnbull AO, Professor Brian Schmidt AC and the Hon. Christopher Pyne MP.

OPENING ADDRESS

The Hon. Anthony Roberts MP
NSW Minister for Industry,
Resources and Energy

The Hon. Anthony Roberts MP welcomed attendees to NSW Parliament House. He apologised for local traffic congestion, but noted that New South Wales invests more in infrastructure than any other state. He thanked Catherine Fritz-Kalish for organising the Summit, praised the Prime Minister's long-standing commitment to the innovation agenda and acknowledged Peter Dunne, Malcolm Crompton, the Hon. Neil Batt AO and Peter Fritz AM.



“The Sydney School of Entrepreneurship exemplifies the cultural change required across the nation. Sydney and NSW are willing to ‘take the world head on’ in terms of innovation and investment.”

- The Hon. Anthony Roberts MP -

Innovation is the engine of economic growth. Advanced economies around the world are striving to encourage and deliver change, and innovation will be the wellspring of future Australian success. Many nations can adopt existing business practices and technologies, and so Australia must push the boundaries to stay ahead of its competitors. NSW will play an important role in the Australian Government’s vision for the nation. NSW and ACT recently signed a memorandum of understanding to cooperate on cyber security issues, and other inter-state competition should be similarly subsumed to help a united Australia compete on the international stage.

Continuous innovation will help Australia adapt to the long-term trends that shape the direction and structure of advanced economies. These include the globalisation of trade, which exposes industries to lower-cost overseas entrants, and the opportunities afforded by the growth of the Asian middle class. Greater urbanisation also brings new challenges of sustainability and liveability, and some natural resources now approach their peak in terms of availability at reasonable cost. The disruption wrought by digital and information innovations is overturning traditional economic norms already evolving in the shift to a low-carbon economy.

Other countries are funding innovation to face these challenges. The USA recently overhauled its innovation strategy, and its 2016 budget seeks \$146 billion for research and development (R&D). The USA aims to invest over 3% of its gross domestic product (GDP) on public and private

R&D, approaching the effort at the height of the space race¹². Finland is one of the most innovative and productive countries in the world and already invests 3% of GDP in R&D. Thirty per cent of its public research funding is directed to commercially orientated work. During the global financial crisis from 2009 to 2012, Israel led other OECD¹³ countries in GDP growth and spent more than any other on R&D per capita. Germany’s focus on STEM¹⁴ education underpins a manufacturing sector which generates 20% of the nation’s jobs, 22% of its GDP and contributed to a trade surplus of US\$250 billion in 2014¹⁵. Germany’s research sector produces 53 patents per 1,000 researchers every year, compared to 39 per 1,000 in the USA. Australia must match their focus on innovation if it hopes to compete.

It may have lagged for some time, but Australia remains a nation of innovators. The Prime Minister was an early advocate of the innovation agenda, and Australia has the ‘brains and ability’ to succeed. As it grew, the nation lacked the capital available in the USA and elsewhere, forcing Australians to ‘think around problems’, rather than ‘throwing money at them’. Australians are well-placed to innovate and start businesses; however, the Government’s 2015 innovation system report showed that only 16% of Australia’s businesses possess a ‘high-performance innovation culture’, compared to 44% of the world’s top 1,000 businesses¹⁶. NSW employs a number of strategies to improve the situation.



With federal support, the NSW Department of Industry is helping universities and the commercial sector to create the jobs of the future. The State Government recently endowed the Sydney School of Entrepreneurship, borrowing both the idea and its leader from Stockholm, and it will launch in 2017. The school exemplifies the cultural change required across the nation and will help people with good ideas in every sector, from the arts to science and medicine, to turn companies employing three, 300 or 3,000 people into \$3 billion corporations.

Further announcements will position Sydney as Australia's 'global city'. Sydney competes with Beijing, Singapore, Hong Kong on the international stage, rather than Melbourne or Adelaide at home. Sydney and New South Wales are willing to 'take the world head on' in terms of innovation and investment. The State Government is strengthening its partnerships with CSIRO and other organisations, while the Greater Sydney Commission, led by Lucy Turnbull AO, is delivering a strategic plan for growth across the whole of metropolitan Sydney.

“Smart Cities – Communication, Engagement and Participation”

Ms Lucy Turnbull AO
Chief Commissioner
Greater Sydney Commission

Lucy Turnbull AO thanked Minister Roberts and Catherine Fritz-Kalish, with whom she travelled to Israel on a recent trade mission. She acknowledged the work of her Deputy Chief Commissioner with the NSW Department of Industry and expressed confidence in the future of Sydney and the State. NSW Industry is transforming itself and understands the need to

develop modern industries. The Greater Sydney Commission works with the Department to plan a prosperous and dynamic future for Sydney, coordinating this economic vision with land-use, transport and infrastructure planning for the first time. Combining these factors with 'soft' infrastructure, such as health and education, will support Sydney's ongoing social, environmental and economic success. The State Government acknowledges the significance of economic clusters and the agglomeration of knowledge work in cities, where much of the service economy is located.

Mercantile innovation flourished in the coffee houses of London from the late 17th century¹⁷. London was the first 'global city' of the modern age, and many of the ideas which powered its ascent were first discussed around a café table. They became the crucible for auction houses, such as Christie's and Sotheby's, the London Stock Exchange, publications, from *The Spectator* to *The Tattler*, and insurers, such as Lloyds of London. These dynamic meeting places succeeded because they were open to men from all social classes, although women were banned from English establishments. As well as finance and trade, some specialised on literature, poetry and the arts, while others focused on science.

The Greater Sydney Commission nurtures that 'coffee house experience' across the city of Sydney and hopes the trend will spread nationwide. Such spaces are open to all and offer new wellsprings of discussion and discourse. The traditional centres of metropolitan Sydney, from Parliament House and Macquarie Street to the CBD, are now joined by up-and-coming areas such as Surry Hills offering fresh scope for 'edgy' and innovation. Similar spaces must be developed elsewhere, given the expensive rents and pressured inner city infrastructure of central



“London was the first ‘global city’ of the modern age, and many of the ideas which powered its ascent were first discussed around a café table.”

- Lucy Turnbull AO -

Sydney, and the Commission is working with the Western Sydney airport region and the Parramatta-to-Olympic corridor. Sharing the spirit of their predecessors in the East End of London, their connectivity, proximity and inclusivity will spur the dynamic collaboration, on which future economic growth will depend.

Catherine Fritz-Kalish praised Mrs Turnbull AO for her boundless energy and personal warmth, while **Peter Dunne** stressed the importance of strong female role models. A passionate ‘policy hackathon’ held in October 2015 saw Erin Watson-Lynn originate DICE Kids, with Mrs Turnbull as its patron – a scheme which helps children explore entrepreneurship through running a lemonade stand. Mr Dunne saw Australia as ‘a nation of shopkeepers and hard workers, rather than innovators’, but praised the Government’s innovation agenda. The British government rekindled the energy of the old coffee houses in London and other formally depressed metropolitan centres, such as Liverpool, Glasgow and Newcastle. That refreshed ‘coffee debating culture’ has in turn sparked economic growth, and a ‘similar fire’ should be lit in Sydney and across Australia.

“Reimagining Universities in Contemporary Society”

Prof Brian Schmidt AC
Vice Chancellor & President
The Australian National University
2011 Nobel Laureate Physics

Prof Brian Schmidt AC joked that Canberra’s success in coffee-making competitions might explain the ACT’s high rate of entrepreneurship. In discussing the need for universities to reinvent themselves, he noted their relentless growth in scope and number, from the founding of the first university in Bologna in 1088. Universities assumed a research role in the 19th century and proliferated after World War Two. Thirty-seven percent of young Australians now go to university, compared to less than one percent 70 years ago. This exponential growth allowed institutions to become complacent with the status quo, but digital and business disruption now challenges the tertiary sector as much as the rest of the economy. Technological advance, including massive open online courses (MOOCs), offers opportunities as well as threats to traditional institutions and could secure their central role in knowledge economy. While not every innovator will go to college, many people will develop their ideas through that experience. Universities are no longer ‘ivory towers’, as their historic role as repositories of knowledge has been supplanted by the World Wide Web. Information is now ubiquitous online,



but, as A.C. Grayling observed, the internet is a source of information, rather than knowledge or wisdom. The universities' advantage in these areas remains, but must be innovated upon if they are not to be superseded by new business models.

The average student attends a university just 12 kilometres from where they were raised. This lack of interstate competition in a supposedly demand-driven system has marginalised people from more remote and rural regions who have less access to education, lower expectations of attendance, and less money to fund their studies. The academic scores used to allocate students to ANU courses are now adjusted to compensate, as students from outlying regions with poorer scores may actually outperform their more privileged metropolitan counterparts. Young people from non-traditional backgrounds must be helped in new ways, given the high living costs of attending traditional institutions. ANU's student intake has the highest average Australian Tertiary Admission Rank in the country, but this is a source of embarrassment as well as pride, as it proves the need to diversify its clientele.

ANU now offers MOOCs to encourage access, and 250,000 have attended online, compared to just 99,000 graduates from ANU itself since 1950. Such MOOCs may not yet equal the quality of traditional ANU courses, but they already outstrip courses offered by some other universities. Online courses will only expand in their number, quality and reputation, as market pressure refocuses universities on undergraduate teaching – an activity which has not been their priority in the past.

While academics still trust the lecture as their primary teaching method, evidence shows that students increasingly prefer alternative methods. Universities must therefore offer new approaches and real-world experience to their students, if they are to retain them. If fewer students now attend

orthodox lectures, preferring to work in the library or learn from their peers, then institutions should work with this trend, rather than fight it. The benefits of socialising with intelligent, highly educated, like-minded people are manifold, and this 'coffee house effect' has always been a major part of the university experience. ANU has the highest percentage of students living on campus in Australia and must leverage this to generate new value and ideas.

Accreditation is a bulwark of university power, but this will also evolve, as traditional degrees are depreciated by firms and students in favour of aptitude tests, micro-courses and curricula pieced together from several institutions. Such courses may not find favour with the Tertiary Education Quality and Standards Agency (TEQSA), but businesses and students now prize more focused and relevant skills. Many academics steadfastly oppose this trend, but universities must embrace it to stay relevant to student and commercial needs; however, universities are still higher education institutions, rather than training colleges, and should retain faith in their strengths and the wider benefits of an undergraduate degree.

Universities are often criticised for not producing 'business ready' graduates, but the value of a broad-based education inevitably reveals itself over the course of a career.

Administrators will need time to convince tenured academics of the need for change, but while they can take a long-term view, they must still steer their slow turning ships in the right direction. The knowledge economy is the key to ongoing university success as well as national economic development. Universities must also renew their offerings to encourage the 60% of Australians who do not attend to use their services. Education will increasingly become a lifelong pursuit, rather than the preserve of the undergraduate, as people



“Universities are often criticised for not producing ‘business ready’ graduates, but the value of a broad-based education inevitably reveals itself over the course of a career.”

- Prof Brian Schmidt AC -

retrain to meet changing job requirements, but industry must be willing to work with tertiary education as universities embrace the commercial world. Academic secondments to industry and joint investments in people, facilities and research should be encouraged, while greater academic collaboration between institutions must also be fostered. ANU now offers new recruits to the Australian Signals Directorate an 18-month master’s degree, for example, which allows them to work on ‘grand problems’ with input from Cisco, Telstra and Data61 while they wait for security clearance.

Universities generated \$19.2 billion in service exports last year¹⁸, more than the natural gas industry. Marketing to foreign students was born of financial need, but Australian universities now earn seven times more income from foreign students than Canada, three times more than the USA, and twice as much as Britain per capita. This income supports academic quality without undue calls on the public purse, while HECS-HELP allows domestic students to fund their education at a reasonable rate. However, these income streams cannot be ‘milked’ forever, and new sources of income must be found. Both universities and government education policy must innovate and embrace change to maintain academic excellence, strengthen financial returns and support a prosperous and well-educated population.

Peter Dunne offered the example of an Australian opening coffee shops in New York as an example of international success, before introducing the Hon. Christopher Pyne MP.

KEYNOTE ADDRESS

The Hon. Christopher Pyne MP
Minister for Defence Industry
Leader of the House
Australian Government

The Hon. Christopher Pyne acknowledged the Prime Minister, current and former parliamentary colleagues and Nobel Prize winner Prof Brian Schmidt AC. South Australia has produced a third of Australia’s fifteen Nobel laureates, and the Minister championed Adelaide’s coffee over Melbourne’s and Sydney’s.

Defence is a crucial part of the Australian Government’s agenda, and the new spending initiative will shape Australia’s technological capacity for the next three decades. The February 2016 Defence White Paper, the Integrated Investment Programme and the Defence Industry Policy Statement outline a significant increase in the nation’s defence capability at a cost of \$195 billion. This ambitious undertaking is attracting global attention and will require more than 70 cabinet-level decisions a year, rather than the usual twenty. Australia will build 54 maritime vessels over the next several decades, including 12 offshore patrol



“Defence is a crucial part of the Government’s agenda, and the new spending initiative will shape Australia’s technological capacity for the next three decades.”

- The Hon. Christopher Pyne MP -

vessels, 9 Future Frigates, 21 Pacific Patrol Vessels and 12 submarines. The submarine programme alone will cost \$50 billion, with the Future Frigate programme accounting for \$35 billion. Every military base will be upgraded, improved cyber security will safeguard key resources, and the Australian Defence Force will grow to 63,000 personnel, its largest size since 1993.

Australia faces increasing regional pressures, including tension in the South China Sea and strained relationships between regional powers. Australia will remain a staunch ally of its international partners and played its part in Iraq and Afghanistan in recent years. Allies, including the United States, must be assured that Australia can punch above its weight, as other regional powers expand their military resources. Australia has important national and international interests to safeguard and is determined to defend the post-World War Two, rules-based international order which other nations appear keen to undermine. Rights of passage and navigation through the seas, for example, must be staunchly protected.

A new defence innovation hub in Adelaide¹⁹ will guide new technologies from inception to production and delivery. The Next Generation Technologies Fund, run by the Defence Science and Technology Group (DSTG), will support commercialisation and help the domestic defence industry create jobs, growth and exports. Australia has a long tradition of defence innovation, but a

poor export record. Australia’s ‘cultural cringe’ towards the USA and Europe has seen it purchase off-the-shelf solutions, rather than develop its own, but the Commonwealth will now build domestic defence industry capability and pursue export markets.

This military investment will help industry transition, as the mining boom ebbs, and bolster innovation. Although quality will not be compromised in a search for domestic supplies, as much spending as possible will be retained internally to encourage a defence industry renaissance. This will, in turn, drive technological progress and create high-value jobs for engineering and other graduates in advanced manufacturing industries. The Government is investing in STEM education to ensure that young Australians have the skills required, remedying the skills shortage which university entrance requirements and the proliferation of non-STEM school subjects inadvertently exacerbated.

Minister Pyne acknowledged the size of the challenge ahead, but acknowledged that the long-term effort affords no scope for delay. He pledged to minimise the cost overruns which have dogged defence procurement in the past, by setting up sound procedures from the outset. He thanked GAP and Summit delegates for their efforts on behalf of the nation.



“Australia is hamstrung by a long-standing lack of confidence in its own abilities, skills and talents, and a resulting lack of willingness to invest in them.”

- The Hon. Philip Ruddock -

Catherine Fritz-Kalish thanked the Minister, Summit’s sponsors and steering committee, the staff of Parliament House and the GAP team for their support, before closing the evening.

DAY TWO - Friday, 16 September 2016

SESSION ONE

“‘Head Space’, Outer Space, Virtual and Beyond... Creating spaces for Australian innovation”

Catherine Fritz-Kalish welcomed attendees, outlined the Summit’s social media policy and introduced the Hon. Philip Ruddock to chair the opening session.

The Hon. Philip Ruddock emphasised the importance of the Summit’s innovation agenda to Australia. Past prosperity based on high-bulk, low-value primary industries, such as mining and agriculture, cannot be sustained, and current service industries, such as education and tourism, must be supplemented by new sources of income in the future.

Australia is hamstrung by a long-standing lack of confidence in its own abilities, skills and talents, and a resulting lack of willingness to invest in them. The

Sarich orbital engine, developed by a Perth engineer in the early 1970s, could have transformed the motor industry, but was ignored by major manufacturers to protect their investment in traditional technology. In contrast, the American shipyards which built Australia’s current crop of destroyers used relatively primitive technology, such as wooden chocks, but their workers retained their faith in their technological pre-eminence. Sydney’s double-decker subway trains allow more passengers to sit while accommodating the relatively short platforms at Sydney’s metropolitan stations, but the engineer who developed them was unable to secure investment for his electric road vehicle designs. Such systemic rigidities still prevent novel ideas from being adopted today.

Mr Ruddock hoped the Summit would generate ideas to improve the situation, before introducing the first speaker, Matt Wright of Deloitte Access Economics.

“Why Space Matters”

Mr Matt Wright
Partner, Deloitte Access Economics

Matt Wright referred attendees to Deloitte’s 2015 report on *Building the Lucky Country*²⁰ which reconsidered the importance of place to economic development. His research explored the presumption that technology had trumped the



“As place facilitates the productive interaction of knowledge workers, efforts to increase and co-locate human capital should be intensified, alongside measures to reduce the financial and social costs of proximity and density.” - Matt Wright -

‘tyranny of distance’ and found the opposite to be the case. These findings are replicated by prominent international economists who argue that physical location is actually growing in importance, as the world’s economies are transformed by knowledge-intensive activities. This insight should encourage individuals, communities, businesses and government to reconsider the purpose of place in 21st century Australia.

Agglomeration generates benefits for people and firms in urban districts and industrial clusters, as well as lowering the costs of exchanging goods, human resources and ideas. The assumption that these decline with greater digital connectivity and better transport infrastructure is undermined by the evidence, as urbanisation increases, industry remains concentrated and population density continues to correlate with high wages. Far from being eroded in the digital age, the relationship between place and prosperity continues to grow.

Several economists have attempted to explain this phenomenon. Ed Glaeser notes that complex ideas are best communicated face to face, and the most highly valued services in today’s knowledge economy are those which deliver ideas, knowledge and creative skills. Productivity grows through **‘knowledge spillovers’**, and the interaction of smart people in urban areas both enhances human capital and sparks new ideas. **‘Labour market pooling’** affords employees the opportunity to change jobs as their productivity improves and/or the

productivity of particular industries evolves, leading to more efficient allocations of labour over time.

The Treasury’s Intergenerational Reports assert that Australia must boost productivity growth to sustain rising levels of welfare, and agglomeration can unleash the energy required. Although not without its challenges, including the social and environmental diseconomies of higher land prices, pollution, congestion and crime, policy makers and planners should incorporate agglomeration into a swathe of other ideas to catalyse Australia’s next wave of productivity expansion.

As place facilitates the productive interaction of knowledge workers, efforts to increase and co-locate human capital should be intensified, alongside measures to reduce the financial and social costs of proximity and density. People in appropriate numbers and with appropriate skills can be encouraged by their built environment to connect with one another and form relationships, but for people to flourish, they need to feel they belong. Improved public and corporate governance should therefore smooth the sharp edges of agglomeration and help subordinate local concerns to wider interests by unlocking essential new infrastructure and allowing greater population density. New ways for citizens to participate in public policy must be explored to secure community support for the hard choices required to unlock the potential of place.



“Australia has outstanding capabilities in processing and interpreting orbital data to monitor natural resources, vegetation, weather and urban growth, yet does not use its intellectual and technological resources to design and build the satellites it relies upon.”

- Andrea Boyd -

Australians have traditionally looked to the public realm for nation building, but the potential of agglomeration should make the business community reconsider the potential of place as a driver of commercial success. Businesses need increasing returns, and catalysing the economies of agglomeration will increase productivity and their rates of return on investment.

The Hon. Philip Ruddock thanked Mr Wright and introduced Andrea Boyd, a flight operations engineer for the International Space Station (ISS) at Mission Control in Cologne, Germany.

“Innovation in Outer Space & Opportunities for Australia”

Ms Andrea Boyd
Flight Operations Engineer
International Space Station, Cologne, Germany

Andrea Boyd outlined her work with ISS astronauts, maintaining life support, performing science experiments and overseeing complex engineering systems. However, the reality of space technology rarely concerns manned flights or future trips to Mars. It centres on the satellites which enable a host of services for defence and national security, environmental monitoring, telecommunications and navigation. This

technology should also offer employment opportunities for young Australians qualified in STEM, but there is no domestic space industry to design and build satellites. The recently completed Optus and NBN²¹ satellites were built by the USA and launched by Europe, with no Australian input except the payment of their \$2 billion bill. Australia cannot even access the plans of these craft, and any problems must be fixed in the USA. Australia's expenditure on space technology creates no jobs or innovation in this country and leaves the nation reliant on others for its needs.

The same Ariane rocket which launched Sky Muster 1, the first NBN satellite, also carried an Argentinian craft entirely designed and built in that country, although Argentina has just a fifth of Australia's GDP per capita. Argentina also boasts its own space agency, unlike Australia. While the Americans and Europeans purchase space technology from their own producers, Australia must buy it from abroad. While Australia has outstanding capabilities in processing and interpreting orbital data to monitor natural resources, vegetation, weather and urban growth, the nation does not use its intellectual and technological resources to design and build the satellites it relies upon. Australia may soon fall too far behind its established competitors to catch up in an ever-accelerating field. Space is a US\$350 billion industry on the cusp of exponential growth,



yet Australia's only contribution is to send billions of dollars overseas for foreign-owned capacity.

Australia has many strategic reasons to develop its own space technology. It is the sixth largest nation on earth, covering a twentieth of the planet's surface, giving its population a disproportionate responsibility for its custodianship and care. Australia's national satellite utilisation policy and defence white papers confirm the importance of satellite imagery, telecoms and GPS to Australia's defence, economy, agriculture and communications, yet we import all this data from abroad.

Australia collaborates on many international space projects through the provision of ground stations, such as NASA's Deep Space Communications Complex, while the European Space Agency (ESA) relies on ground stations in Western Australia for launches of Ariane. Australia has a proud tradition in astronomy and offers internationally regarded STEM degrees, but students from home and abroad habitually move abroad to work or choose alternative careers through lack of domestic opportunities. Woomera has been a military base rather than space site for half a century, and even the sounding rocket campaigns which informed many a PhD students' theses on aerospace are consigned to history. Australia ranked a disappointing 19th on the 2016 Global Innovation Index²², its productivity performance has lagged for a decade and its space effort has been moribund for 50 years. The Department of Industry estimates that innovation drives 60% of Australian productivity, and a commitment to develop **an Australian space industry** could play a key role in revitalising the nation, not least by encouraging more of the start-ups which have already created 2 million jobs across all industries in recent years.

The isolated islands of domestic success in the space sector are the product of fragmented

individual effort and dogged perseverance, rather than consistent government support. Politicians are reluctant to back space technology, after poor investment decisions in the past produced a string of expensive failures. On a more positive note, the Australian Government recently amended tax regulations to encourage investors to back innovative start-ups at a time when international investment in space is growing rapidly. Venture capital investment in space last year equalled that of the previous decade, showing the strength of the business case and the magnitude of anticipated returns. Companies in New Zealand and USA recently raised almost US\$500 million in funding, while oil-reliant nations such as the United Arab Emirates, Qatar and Bahrain in the Persian Gulf are using their wealth to diversify into space and related technology. A dozen or more space start-ups in Australia also seek capital to support their growth, but many struggle for any support.

This activity is spurred by the development of small, cheap but capable **CubeSats** which can carry out many of the functions of large traditional satellites costing between \$300 million and \$3 billion. CubeSat businesses can begin with just \$200,000 in funding, within the range of a Kickstarter campaign or a small business loan, and half the cost of a fast food franchise. ANU has a new space hardware test facility at Mount Stromlo capable of 'shake and bake' and thermal vacuum tests with a full clean room, and yet Australia has no craft to test in it. The Department of Industry spends between \$65 million and \$89 million on satellite data for civilian use every year, while billions more are spent on data for military purposes. Despite this heavy outlay, Australia has consistently rebuffed an offer to join ESA as a non-European cooperating member at an annual cost of \$20 million for ten years. This fee would be recycled into the purchase of Australian technology and services and grants to Australian research institutions, ensuring no net loss for the country.

Canada accepted a similar offer and developed a Ca\$3.5 billion space industry which employs over 9,000 highly qualified professionals in over 200 companies and generates thousands of manufacturing jobs. An Australian approach to join ESA could have similar benefits, opening an instant customer base and restoring the transfer of knowledge lost over the last 50 years.

Ms Boyd argued this represents a 'zero risk, zero capital' opportunity to create a viable domestic space industry, with the ten-year commitment protecting it from short-term political uncertainties, thus encouraging long-term private investment.

The synchrotron alone was allocated \$520 million of the \$2.3 billion funding attached to the National Innovation and Science Agenda (NISA). The Department of Innovation is now looking for its next major project, and Ms Boyd urged the creation of an Australian Space Agency to fill that role. This agency could be run for half the cost of the synchrotron over the next decade and would create jobs, spur innovation, support local manufacturing and build a sustainable space industry that retains Australian talent and replaces imports with exports. Amendments to the 1998 Space Activities Act have been proposed to government to reduce the costs and bureaucracy of product development, and a host of expat Australian personnel would contemplate a return to work in this sphere.

Ms Boyd urged the creation of a domestic space agency and an application to join the ESA from the Prime Minister, Science Minister or the head of the proposed Agency, before Adelaide hosts the International Astronautical Congress in September 2017. The world's premier space agencies and companies will attend this prestigious week-long event, won in the face of strong competition from the USA and Germany, and it offers a perfect launch pad for a renewed Australian space effort.

Dr Andy Thomas AO, an Australian-born NASA astronaut, recently met the Prime Minister to propose the creation of a seven-person panel of experts from defence, government, academia and industry to define future Australian participation in the space sector. Now the election is over, Ms Boyd urged the activation of this 'tiger team' to reap the economic, technological and national benefits an Australian commitment to space would secure.

The Hon. Philip Ruddock thanked Ms Boyd for her challenging address before introducing Dr Melis Senova to discuss the importance of 'mindsets' to innovation.

“Head Space for Creativity and Innovation”

Dr Melis Senova
Founder, Huddle

Dr Melis Senova supported Ms Boyd's space agenda, acknowledged the traditional custodians of the land and wondered if they, too, had discussed innovation. She argued that people's mindset underpins and informs all investment decisions and that a revolution in innovation therefore depends on a radical change in underlying attitudes and culture. The innovation debate often concentrates upon *what* is needed in terms of incubators, infrastructure and coffee shops, or the *how* of process, but tends to ignore *why* people should care, or any goal beyond economic gain.

Dr Senova created Huddle seven years ago to showcase modern creative principles instead of 20th-century business notions of command and control. The company is now a global success and helps other organisations make the same leap to



“The innovation debate often concentrates upon *what* is needed in terms of incubators, infrastructure and coffee shops, or the *how* of process, but tends to ignore *why* people should care, or any goal beyond economic gain.” - Dr Melis Senova -

view their business beyond maximising profits and sales. Some companies employ more than 250,000 people and affect the lives of millions more through the services they provide. Huddle helps them leverage that power for a greater good. Dr Senova criticised the ‘poverty’ of CEO attitudes to innovation and outlined some of the seven ‘mindsets’ she identified in collaboration with Prof Harold Nelson, Nierenberg Distinguished Chair of *Design* at Carnegie Mellon University.

The first and most fundamental requirement is retaining a ‘beginners’ mind’, as this openness allows all other mindsets to be adopted. A beginner’s mindset welcomes opportunities to learn no matter how much people think they know or how long their experience. People who nurse a closed ‘expert’s mentality’ reject fresh ideas, but to innovate, we must view familiar activities in a fresh light. Innovative people remain amenable to new beliefs, including those relating to social norms of business and personal success.

People who believe they lack creativity artificially limit their own horizons and all too often use it as a ‘theory of convenience’ to shy from the effort involved. Dr Senova’s medical research in Japan revealed the human brain to be a ‘beautiful, elegant, pattern-matching device’, while belief is a blueprint which our minds match patterns to. People should be aware of the blueprints in their mind, as they shape perceptions of what is possible. Society can hold some things as immutable, or see change as too hard to attempt, and this becomes a

self-fulfilling prophecy. People will always find evidence to substantiate these entrenched beliefs, and so to innovate, we must consciously open ourselves to a renewed sense of possibility.

A creative mind believes that anything is possible. Major CEOs may argue their freedom of action is curtailed by compliance issues or other insurmountable boundaries, but a creative mind embraces *and*, not *or* solutions. The ‘trade-off mentality’ which plays cost, quality and time against each other is not conducive to innovative approaches. Rather than prioritise a particular facet, creativity can spring from accepting the importance of them all. While *and* statements can seem appear ‘ridiculous’ at first glance, united efforts to enrich quality, improve timeliness and reduce cost can prompt solutions to improve the business as a whole.

People live and work in complex socio-technical systems and interrelate in dynamic, ambiguous and sometimes irrational ways. Linear ‘problem to solution’ thinking will not deliver appropriate solutions in such fluid environments. The retention of a ‘whole mind’ is required, producing thinking that is contextual, inclusive and systemic. Innovation often centres on some isolated object, product or solution, rather than considering the complex and evolving system it will operate in. The challenges facing humanity are not amenable to simplistic ‘point solutions’. Systemic challenges require systemic thinking and unified action to overcome.

Dr Senova urged political and business leaders to offer a clear sense of *why* people should innovate and set an inspiring direction for the nation. If Australians shared a bold and courageous intention then events such as the GAP Summit would gain more traction and galvanise action. She suggested that every activity should have a net positive impact on animals, people and the planet and hoped that attendees would examine any instinctive dismissal of this goal. If Australia lacks an intention that is bold, courageous and meaningful, then what are its people striving for? There must be a higher purpose to innovation beyond economic prosperity if the aim is to inspire the nation. Australia can model what is possible for the world when it opts for something extraordinary.

DISCUSSION

The Hon. Philip Ruddock thanked Dr Senova and invited questions and comments from attendees. These were recorded under the Chatham House rule of non-attribution and are summarised below by topic, rather than speaker.

▶ Ghetton of Agglomeration

While economic agglomeration risks the creation of ghettos and other diseconomies of scale, Deloitte's 2015 report on *Building the Lucky Country* outlines in much greater detail how the dynamic forces of technology, people and community and better public and private governance can reduce their incidence.

▶ Environmental Challenges

The entrepreneur and environmental activist John Elkington was once told that Silicon Valley achieves results but does not consider their consequences. In a similar fashion, the innovation debate and Australia's political and business elite ignore the

calamitous effects of human activity on the planet's environment and climate. While science, space and other activities are important, sweeping economic change must tackle climate change and nature's degradation. Australians must address carbon, water and energy issues, rather than build new coal mines on prime farming land. Radical action is required to ensure Australia meets its Paris Climate Conference commitment to help restrict global temperature increases to 2°C. While science is often called upon to support the innovation agenda, overwhelming scientific evidence on the urgency and severity of climate change is habitually ignored, and this anti-science agenda must be addressed to save the planet and its population.

▶ A New Value Paradigm and Impact Investment

The traditional business mindset concentrates on tangible financial measures of exchange and value. Huddle is working with an academic partner on a new, post-capitalist mechanism which it hopes will fundamentally disrupt the way that large organisations in Australia perceive value.

Blue River Group is an impact investment services firm which combines economic returns with positive social outcomes. It was formed to help philanthropists who want to make a difference by doing more than writing cheques. Impact investment allows investors to support their values and generate quantifiable environmental and social benefits without surrendering commercial returns. Australia still lags behind the USA and UK in this approach, as superannuation funds and their managers retain a purely financial mandate, but integrating impact investment into the innovation agenda could help produce the paradigm shift required.

Generational change is underway as wealth moves into the hands of the post baby boomers, and



attendees were asked to consider their own investment priorities in this light. While impact investing is a 'fantastic new phenomenon', there may not be enough investable entities for impact investors to secure both a financial and social return until the nation invests in capability and inspiring people of every age to this end.

▶ **Entrenched Attitudes and the Reasons Behind Them**

While the need to innovate and reform cultural attitudes is generally acknowledged, the reasons why these attitudes remain entrenched are often ignored. People in any industry may be unable to explain their work habits beyond tradition and force of habit, while many companies still mistake their product for their business. A commitment to a higher purpose should underpin every decision, but under pressure of time or scarcity people tend to default to the path of least resistance. Firms may lack an ethos because they do not value the idea or fear it would become a hostage to fortune. Some organisations now take the time to examine their purpose beyond profit and survival, but failure to live up to these ideals can produce more problems than it solves.

▶ **Australia in Space**

A South Australian space policy advisory group urged the government to develop Australia's space sector a decade ago, with little practical response. Society still fails to appreciate its social and economic reliance on satellite technology, and the inability of advocates to get that message across still inhibits attempts to jump-start the industry. The public still view space in terms of speculative missions to the Moon or Mars, rather than appreciating its value to communications and Earth observation. In common with other policy spheres, space has suffered from a lack of consistent government policy, and Summit delegates were

urged to lobby for a bipartisan approach, just as Landcare succeeded a decade ago with the help of broad political acceptance. To back up its most visible champions, the space sector requires broad and consistent support at all levels of politics and industry to safeguard the country's social, economic and security fabric into the future.

Global Access Partners was asked to promote Australian associate membership of ESA to decision makers. Australia rejected the ESA offer in the 1970s and 1980s due to political short sightedness and pressure from the US military and ignored a third approach at the turn of the 21st century. ESA will now only entertain an approach from the Prime Minister, Minister of Science or head of a new space agency, but remains open to Australian membership. Executives at the NSW Department of Industry could be approached about the space agenda.

Australia has successfully exploited niches in the past, and its mining expertise might be directed towards harvesting asteroids for metals and water to support further exploration of the solar system. However, its national interest remains in developing domestic satellite technology, and funds should not be committed to more speculative endeavours.



▶ **The Risks of Relying on Foreign Space Hardware**

While Australia is an excellent analyser, and heavy consumer, of data, it is a nation of 'Uber drivers' rather than 'Uber creators' and is critically reliant on space infrastructure owned by other countries. Australia uses foreign-owned satellites for everything, from weather reports and shipping schedules to satellite phones in rural communities, remote sensing, Earth observation and agriculture, and if Argentina can design and build its own broadband satellites, then so can this country. Australia has the skills and technology to produce its own hardware, but remains the only OECD nation to lack its own space agency. New Zealand recently created its own space agency with whole-of-government policy support, prompting many Australians to move there to work.

The ISS will shut down in 8 or 12 years and be dropped into the Pacific. Ms Boyd was urged to return to Australia after its loss to head the proposed space agency, rather than work for NASA or ESA. It was hoped the proposed agency would launch well before that, in time for the ISA conference in Adelaide in September 2017, and that Australia would have a thriving space capacity by the time the ISS was abandoned.

▶ **The Canadian Space Industry**

Canada accepted the ESA associate membership rejected by Australia, with its government, industry and academia united in a 'Team Canada' approach. Australia could learn from this approach if it applies to ESA again, and progress is already being made, with wording to remove the restrictions imposed by the 1998 Space Policy Act proposed to Canberra in February this year. This should cut the administrative and legislative overheads of CubeSat projects from \$700,000 to \$15,000. Previous space investment decisions by Australian governments failed to

discriminate between viable and unviable manufacturing projects, dampening enthusiasm for the sector, but more informed decisions could be made today.

▶ **Cuberider**

Cuberider, a Sydney start-up melding space and education, is increasingly frustrated with calls for projects in these areas, as it has already sent the first Australian experiment to the ISS yet struggles for adequate funding. Cuberider has taught over a thousand teenagers to code alongside the soft skills which have been largely ignored in the Summit debate. Not every child can be a scientist or engineer, but they will all benefit from exciting hands-on experiences in the science classroom. As one of Cuberider's employees achieved government certification in five months, compared to the 18 months which Optus' team of lawyers required, the company found the government amenable to removing red tape. However, more effort to remove restrictions would benefit all stakeholders. While people appear to support its intentions, Cuberider must continually leap the same hurdles to deliver its service to children in schools. Every start-up begins by writing its vision, but the time has come to invest in such companies and deliver services in reality.

▶ **Developing Creators not Consumers**

Australia's resources made it an affluent nation, but this may have sapped its creative zeal as Australians can afford to consume, rather than create. Australians shun risk and the rigours of reform, as decades without recession have taught them not to 'rock the boat' as 'things are good'. It is irrational to invest in uncertain or novel endeavours, as most of them will fail while property offers a safe and lucrative alternative. Children fail constantly and learn from their mistakes, but as a society, Australia risks ultimate failure by not embracing change. It is



living in a 'fool's paradise' if it believes that global circumstances will remain this amenable in the future. Those vocal in the innovation debate must take personal responsibility for fostering change as well as call for it from others. The fact that such discussions continue year after year demonstrates the failure of their participants to risk more and challenge themselves. Attendees were urged to 'disrupt themselves' before the next GAP Summit in twelve months' time.

▶ The Role of Universities

The role of higher education in space, innovation and mindsets should be remembered in the discussion. Although universities can appear cumbersome bureaucratic institutions that struggle with change, they will reform themselves, or they will perish. Australian universities have strengths in aerospace, engineering and astronomy, but more entrepreneurship should be introduced across the curricula. Space-related courses attract high-calibre international students, but these graduates then relocate to work, given the lack of a domestic space industry.

▶ Stable Government Policies

The chronic instability of government policy has inhibited long-term private investment decisions. Tax breaks and innovation incentives rarely last a complete parliament, when such measures must remain in place for a decade to maximise their value. The Medical Research Future Fund was explicitly excluded from the normal churn of policy, but, as the Federal Health Minister controls its spending decisions, the temptation to direct funds to marginal seats may prove too great to resist, whatever the restrictions envisioned by Prof Ian Frazer AC. The 'frivolity' of successive governments' policy in recent decades must be replaced by more sober, stable policy frameworks,

as nobody will invest in projects which may lose political support long before they generate returns.

▶ Connectivity Ratings for Buildings

Just as the introduction of green ratings and sustainability awards encouraged environmentally beneficial innovation in building design, so ratings for buildings, precincts or campuses' ability to drive collaboration and innovation might play a positive role. The new precinct at the University of Technology, Sydney, for example, uses modern architecture to encourage interaction, although the quantitative measurement of such benefits remains a difficulty.

▶ The BRAIN Initiative

The American BRAIN initiative²³ is another important international project which Australia neglected to support, despite fervent lobbying by the American ambassador to Australia, John Berry, on its behalf. A recent proposal by Google to involve Australian universities in its clinical neuroscience research also foundered on the inability of universities to subordinate their partisan interests to collaborate effectively. The failure of academics to consolidate their efforts has excluded Australia from this valuable transfer of knowledge, and these insular and self-serving attitudes must be addressed alongside political and business problems to encourage innovation and research.

▶ Fresh Mindsets in Education

Entrepreneurship, creativity and new problem-solving paradigms should be encouraged in schools. Preschool children are naturally inquisitive and learn from their mistakes, but tend to lose this curiosity and wonder as they progress through school. Parents and teachers can undervalue the mistakes their children make and the lessons they learn, preferring accuracy and industriousness to risk taking and imagination. School exams reward

the recycling of succinct and correct answers, rather than explorations of individual approaches and experimentation.

Just as children are taught to find the correct answer in the quickest way, rather than examine problems more deeply, so employees are rewarded for the relentless implementation of point solutions, rather than understanding the problem at hand. Creators tend to revere questions, rather than answers. The child-like attitude which questions why everything is the way it is should be protected and fostered at home and school, rather than ground down in the pursuit of academic success.

Australian business, education and political culture emphasises competition, rather than cooperation. Education should offer young people a picture of what collaboration means and foster more positive mindsets, encouraging knowledge to be shared for mutual benefit, rather than jealously guarded for personal advantage.

The relatively small number of Australian students at particular institutions, and the lack of collaboration between Australian universities, restrict the opportunities for 'coffee house' networking, which larger courses in the UK and the USA automatically enable.

Attempts to educate a more agile and creative generation are focused on re-establishing the STEM curriculum, but more might be gained by instilling new concepts of digital learning and problem solving across the entire curriculum. The thinking which underpins programmes such as Young ICT Explorers, DICE Kids and Club Kidpreneur should be applied in every subject, not least to benefit the girls who do not see themselves embarking on engineering or science careers. The ability to deploy STEM and entrepreneurial skills across all industries as they move into the world of

work would allow a more creative and innovative approach across the whole of society, rather than pigeonhole it in particular sectors.

▶ **Creative Thinking & Tolerance for Failure**

While many people of working age propose new tech start-ups to investment companies, such as BlueChilli, their chances of success can be constrained by previous years of work in more structured corporate environments where 'out of the box' thinking was discouraged. An innovative agenda must tolerate missteps, rather than demand constant success, but the corporate world does not reward executives for endorsing failure, just as politics punishes politicians who eschew the safe and easy option.

Many promising Australian innovations foundered for want of commercial or government support, scuppered by the element of risk involved. Strategies for encouraging a greater appetite for risk among executives and politicians must be found, as there is little point in teaching children to be entrepreneurs if their dreams will be frustrated when they leave school.

Just as children learn to walk through their missteps in a safe environment at home, so adults could benefit from 'safe places' to learn from their own and each other's failures without stigma affecting their reputation or career. Such 'fail-free' settings would encourage people to learn, share and collaborate and, above all, realise that falling short of one's goals is not the end of the world, but a positive learning experience. While the collapse of multibillion-dollar projects is never a viable option, iterative tests at an early stage reveal problems before large sums of money have been wasted. The design process involves constant and immediate testing and encourages a collaborative, rather than competitive, approach to work.



Australia would also benefit from the invention of a chair which kicked anyone who responded with 'yes but' to a question or suggestion. This would remind people to be more creative in their answers and offer practical solutions, rather than reasons to avoid activity.

▶ The School for Social Entrepreneurs

The School for Social Entrepreneurs²⁴ is a new business school which combines commercial rigour with the passion of the not-for-profit sector to pursue more effective social benefits. The school attracts 'change makers' impatient with the failure of government and charities to tackle Australia's most entrenched issues. Over 450 alumni are taking ownership of these problems and implementing their own solutions. Although the success rate of these projects remains low, the school has fostered collaboration and holistic approaches. No individual or organisation can make substantial progress on such issues alone. Success depends on understanding the players in a system, and Summit delegates were urged to pool and use their expertise and contacts to increase their impact. Leadership is required to bring stakeholders together and set mutually agreeable goals which all can work towards.

The School has a number of older entrants who seek more social endeavours after successful corporate careers. Australia must capitalise on their experience and ability while accepting that progress will take time and wrong turns will be taken on the road to success.

▶ Mental Health

The Prime Minister has said that Australia's greatest resource is the curiosity and brainpower of its people. Young and Well CRC²⁵ worked on strategies to improve the mental health of young people as a worthwhile end in itself, but the mental health of all Australians should now be improved



to boost the nation's productivity. One mental health organisation has pursued this end by taking public bureaucrats to work with people with mental health issues – an experience which radically changed their approach to providing services. Insanity has been defined as performing the same action while expecting a different result, but many health, education, social and justice policies are continually implemented despite their repeated failure. Thought leaders in these areas must work with politicians and bureaucrats so they can see themselves as partners in, rather than merely funders of, new policy approaches.

▶ Personal Risk Coefficients

While Summit attendees are united in their support of innovation, co-creation and design, their appetite for risk exceeds most of the population. When different appetites for risk collide, opportunities for progress are often blocked or rejected. The Summit's positive ideas should therefore be linked in a productive and co-creative partnership with government. Just as car drivers of different abilities and experience may pose different levels of danger to other road users at the same speed, so every individual has their own perception of risk and appetite for adventure. Rather than urge every individual to risk as much as

entrepreneurs, inventors or venture capitalists, the different 'risk coefficients' of diverse individuals should be respected and applied accordingly. Such a coefficient should be quantifiable, allowing people to know themselves and shape their actions appropriately. Someone else will always take more or less risk than ourselves, but this does not mean that any individual's personal risk coefficient is inherently mistaken.

Many commentators and business advocates call for the government and public sector to shoulder more risk than commercial companies appear willing to bear. The assumption that politicians should take greater risks than entrepreneurs and venture capitalists is unlikely to be shared by the electorate or the political class, meaning such calls will always fall on deaf ears. Commercial companies should be prepared to invest in their own success, as they will reap the profit from it, rather than rely on the public purse for support.

SESSION TWO

“How can Australia win the ‘space race’ to become a global innovation hub?”

Catherine Fritz-Kalish emphasised GAP's stance as an independent, bipartisan organisation committed to bringing all sides of the debate together to collaborate. She introduced **the Hon. Stephen Conroy**, who had announced his senate retirement the previous evening.

Mr Conroy introduced Sebastien Eckersley-Maslin, the founder of the BlueChilli, a venture capital firm, as the first Session Speaker.



“Three Pillars of Building a Culture of Innovation”

Mr Sebastien Eckersley-Maslin
Founder & Chief Executive Officer
BlueChilli

Sebastien Eckersley-Maslin supported Lucy Turnbull's argument that spaces for debate and interaction will foster innovation. He recounted his military career, but mourned the loss of his childhood dream of becoming an astronaut. BlueChilli supports innovative firms, but accepts that innovation itself is an esoteric and abstract concept. It is not a product or service, but it drives a swathe of government policy. It cannot be directly measured in tangible terms, but may be seen as an output controllable by its inputs of human capital and business culture.

An innovative culture relies on three factors – speed of execution, empowerment of people and tolerance of failure. Mr Eckersley-Maslin illustrated these themes through his work with Club Kidpreneur, which has given 15,000 seven- and eight-year-olds the chance to run their own micro-business. He mentioned a seven-year-old boy who pivoted his plan to sell paper aeroplanes at a market to offering the experience of flying them



“Australia is an inventive nation, but lacks the sense of purpose to channel its creativity. It can aim to solve the world’s biggest challenges if it chooses to dream.”

- Sebastien Eckersley-Maslin -

through a target with the plane as a prize. Given the chance to shape his own destiny in a supportive environment, tolerant of experimentation and failure, the boy generated his own ideas and acted decisively to change his business model when he ran short of merchandise.

Business and government can learn from this boy to move more quickly, given the speed of change in modern technology. Funding is still to follow some of the measures announced in NISA in November 2015, for example, although BlueChilli’s own ‘policy hackathon’ has produced three partly funded schemes over a similar time span.

More people must be empowered to make decisions in organisations, to stop progress being stymied by a sole ‘critical funnel’ for strategy. This approach will also demand a greater tolerance for failure. Australia’s ‘tall poppy’ syndrome delights in cutting down successful people when they fail, when a more positive attitude would celebrate achievement and praise those who pick themselves up after a setback to start again.

Israel’s vision of becoming the world’s ‘start-up nation’ was supported by its policy of encouraging foreign firms to base research and development centres there. 300 such centres have now been founded, generating 33,000 jobs, 23,720 of which are in the technology or STEM arena. These centres nourish an ecosystem of innovation around them, and their owners buy three quarters of the Israeli start-ups which choose to exit. Israeli culture

prizes intelligence, drive and activity, allowing a country with the landmass of greater Sydney and the population of NSW to become an international economic and technological powerhouse. If one policy to drive innovation in Australia could be adopted without fear of press reaction, then tax-free status for such centres would bring the world’s most creative minds to this country in droves. Such a bold strategy may never eventuate because Australia lacks the vision to give it purpose and therefore bolster support.

A bold national vision must be promoted to encourage a culture of change and inspire the young astronauts and entrepreneurs of the future. Every successful start-up has a clear and inspiring vision. Uber envisions transport as reliable as water for everyone, everywhere. WeWork promises a world where people work to have a life, not just a living. SpaceX looks to enable a life on Mars. BlueChilli connects corporates, innovators and investors to solve the world’s biggest challenges. These are inspirational vision statements that people can rally behind. People work for BlueChilli to realise its goal, rather than pocket their salary. Countries can also have a vision. Israel’s quest to be the world’s start-up nation is a brand which has brought a host of corporates, R&D centres and innovators to its shores. What is Australia’s vision to be?

The USA was inspired by the Apollo programme in the 1960s. John F. Kennedy’s pledge to put a man on the moon within the decade brings goose bumps to people who were not even born at the

“Businesses, universities and governments can collaborate to lead the ‘head’, but other approaches must stir the heart and show that innovation benefits everyone, not merely the elite.”

- Kristin Stubbins -



time. It was worth accomplishing not because it was easy, but because it was hard. That courage, conviction and leadership not only accomplished its aim, and outlived its instigator, but inspired an entire generation to study STEM and, seeded by government contracts to develop microprocessors for Apollo, led to the Silicon Valley tech boom. The moon shot transcended political boundaries. It became a populist movement which no politician dare oppose or delay because it represented what their nation stands for.

A fresh and equally ambitious goal for Australia could inspire its young people to achieve their potential. It could drive and unify policy around immigration, funding and grants, but, above all, it would give people a reason to strive. Mr Eckersley-Maslin challenged Summit delegates to offer a suitably inspiring vision for Australia, support a taskforce to pursue it, and identify the key industries to innovate in. Australia is an inventive nation, but lacks the sense of purpose to channel its creativity. It can aim to solve the world's biggest challenges if it chooses to dream.

The Hon. Steven Conroy introduced Kristin Stubbins, a partner in PwC who heads a GAP taskforce helping Sydney become a global innovation hub.

“Sydney as a Regional Innovation Hub”

Ms Kristin Stubbins
Partner, PricewaterhouseCoopers

Kristin Stubbins acknowledged the traditional custodians of the land and traced her passion for innovation back to concern for her child's future. Change will not occur if ordinary Australians are passive participants in democracy and wait for government to act.

Her reading and experience underlines that an innovative and agile mindset is critical to success in modern life. The world of 2030, perhaps even 2020, will be very different to 2016. Men will live five years longer, and the retirement age will increase accordingly, while the interaction between mobile and Internet of Things (IoT) devices will intensify exponentially. The value of the sharing economy will grow, while 44% of jobs will be significantly disrupted by technology, data analytics and automation. By some estimates, almost a third of all vehicle sales may be driverless machines. While the technical requirements of jobs in fifteen years will inevitably change, the adaptability and agility already prized in the corporate world will become essential attributes.

Undertaking this journey is an immense task, but significant shifts have proved more manageable on a city or regional basis. Tel Aviv, Silicon Valley, Singapore and London have enjoyed great success,



and Sydney must also become a hub of global innovation to thrive. The GAP/PwC Taskforce “Sydney as an Innovation Hub” will help the city capitalise on its assets and unites diverse thinkers, innovators, entrepreneurs, industry leaders, academics and government representatives to this end. This vision for Sydney could then be rolled out in other cities and regions across the country over time.

While some believe that Sydney is already an innovation hub and others question the need for the approach or fail to grasp its significance, the reality is that Sydney still falls short of this goal. It is a major tourist attraction and a multicultural hive of activity. It hosts the Australian stock exchange and can claim half of Australia’s five hundred largest companies and almost two thirds of the nation’s start-ups. Four of its universities feature in global tertiary rankings and, above all, Sydney is a place where bright young people want to live. However, Sydney cannot compare in terms of economic dynamism or technological innovation to Silicon Valley, Tel Aviv or Singapore, and no favours are done by pretending otherwise.

Innovation hubs can grow in different ways. Silicon Valley grew organically after its Apollo-powered inception, while Tel Aviv’s performance was improved through deliberate policy. Singapore, a city state occupied by Japan in World War Two, turned itself into a glittering global financial services centre in a single generation. The GAP Taskforce will create a map for strategic growth because the drive must be more than a branding exercise. While innovation hubs can be built, they cannot be copied, and so the plan will build on Sydney’s natural strengths, competitive advantages and unique characteristics rather than sip the ‘secret sauce’ somehow shared by Silicon Valley, Stockholm and Singapore. Sydney enjoys a safe and attractive environment, while NSW produces food for expanding Asian markets. The city is known for

education and financial and professional services and should use its increasingly diverse cultural mix to its advantage.

While attention often centres on start-ups, companies of all types must be encouraged to innovate. Australia’s top 200 companies have all been disrupted to some degree by the changing global economy and increasingly recognise the need to reform their business models. In addition to its 2,000 start-ups, Sydney has thousands of SMEs which could grow in size.

The poor collaboration between academia and industry, and within academia itself, is often criticised, but improvements offer opportunities for progress. At the Summit’s opening dinner, Prof Schmidt AC discussed ANU’s efforts to embrace industry, but the business community must participate as well. Multinational organisations, small businesses and academic researchers all cohabitate on university campuses in Israel where the coffee house culture praised by Lucy Turnbull AO also thrives. Sydney’s universities are embracing this approach, and the business sector must involve itself to commercialise the fruits of these labours.

Ms Stubbins extolled the virtues of indigenous cultures and called for Dreamtime storytelling to unlock understanding, passion and pride. While businessmen seek instant, point-to-point solutions, her experience with PwC Indigenous Consulting has shown the value of patience and ‘deep listening skills’. Businesses, universities and governments can collaborate to lead the ‘head’, but other approaches must stir the heart and show that innovation benefits everyone, not merely the elite.



DISCUSSION

The Hon. Stephen Conroy thanked the speakers and invited comments from the floor.

▶ Encouraging Young Entrepreneurs

The 2015 GAP Summit precipitated the STEM Network initiative which now involves twelve major firms in supporting STEM education. This year's opening dinner saw innovative young Australians showcase their projects to attendees, including a software solution created by year 12 students now used by 15 schools in NSW which may be applied across the state. These children want to know how they can become a majority, rather than remain a tiny minority, among their peers. Delegates were asked to take the science and business programmes extolled at the Summit to the 4,000 disadvantaged schools supported by The Smith Family, while participants in Young ICT Explorers and similar schemes should be linked to venture capital firms such as BlueChilli to offer them support and advice as they develop their ideas.

A 2015 Policy Hack²⁶ inspired the creation of DICE Kids, a lemonade stand scheme to help young children run their own micro-business and encourage a more entrepreneurial generation.

While schools and colleges increasingly teach business skills, the early years – or 'inspiration stage' – tend to be neglected. DICE Kids gives children a box of materials and, with the help of patron Lucy Turnbull, targets disadvantaged schools in poorer or more remote regions. Children can then be encouraged to join other projects, such as Club Kidpreneur and ICT Young Explorers.

These young people should then be linked with mentoring and financial support in their later school and university years to offer avenues for further growth and experimentation. Swift execution and safe spaces to fail will maintain their enthusiasm and channel them towards the innovation ecosystem as they leave education for the world of work.

▶ The Challenge of a Low-Carbon Economy

Radical economic and environmental reform was again offered as the overriding challenge Australia must face. The bio-physical capacity of 5.3 Earths would be required to support the world's 7 billion people at Australia's standard of living, compared to 4.8 at US levels, 3.5 for Europe, two for China and 0.7 for India. Australia's economy relies on carbon pollution, and while political and business leaders pay lip service to the need to slow climate change, they are reluctant to lead the world rather than follow. Unless emergency action is taken, irrevocable and catastrophic changes will occur – as they are already at the poles - and disproportionately affect Australia. Action must start now and continue over coming decades. Above and beyond clean energy technology, there must be a complete rethink of the nation's value systems and economic arrangements. This challenge demands a grand vision to unite the innovation effort towards a worthwhile cause.



An ambitious goal of 100% renewable energy use by 2030 would give Australia the 'moonshot' it requires to inspire and unify innovation. The effort to become the world centre for renewable power and energy efficiency could transcend political boundaries and drive the nation's research, tax incentives and immigration policies towards a single goal. It would attract the world's smartest minds in the fields of solar, battery and alternative energy technology, while start-up grants and support would drive clean tech and energy efficient technology. This approach has already succeeded in Israel where every building must bear a black and white water tank to be warmed by the sun. By contrast, sunny Australia still relies on polluting and expensive gas and electricity to heat its water.

Australia developed a great deal of early solar power technology, but most manufacturing is now carried out in China. The climate change crisis requires more than technological fixes, but must accept radically new economic and social thinking. It is an immediate existential necessity for the nation, rather than a future technical option.

▶ Tending the 'Weeds'

Despite all the schemes to encourage it, innovation cannot be institutionalised. Innovation and the institutional mindset are diametrically opposed, and so, rather than discuss ways in which bureaucrats can foster it, innovation should be allowed to grow like a 'weed', sprouting wherever it finds a crack of space or hint of nourishment. Most genuine innovators are individualists, rather than collaborators, and will always chafe under the restraints and assumptions which government and society might place upon them. Australia should therefore embrace innovation as a wild, self-seeding 'weed', and, rather than smother it in attempts to codify and order its growth, allow it to flourish away from more cultivated processes. Everyone cannot innovate, and true innovators

should be appreciated, allowed to fail and left alone to plough their furrow independent of structures, however well-intentioned, which might stifle them.

Some attendees argued that Australia's population is too small to support such an approach and warned that failed entrepreneurs may need years or even decades to pay off the debts of their unsuccessful enterprise. Such people are not in a position to launch new ventures, if that imperils the financial stability of their families. However, Israel thrives despite its small size and population because it has a powerful vision and brand. It draws international talent and investment, which in turn drives its own start-up scene. While Australia's 23 million people is not a large enough market in itself, technology and free trade have reduced the barriers to international trade, although Australian firms must want to export to take advantage. While Australian innovations tend to make people's lives easier, Israeli start-ups make people's lives better, and that focus on making the world a better place inspires and invigorates their culture.

Australia should think like a big country, whatever its relative size, and make best use of its outstanding human capital and natural advantages as one of the best places in the world to live. Sydney's environs and climate make it a more attractive place to reside than San Francisco and Tel Aviv, and this should be used as a selling point to encourage more people to come here to do business. Tax policies should also help Australian firms to retain their residence, rather than reduce their tax burden by relocating overseas.

▶ Restructuring Established Businesses

The CRC for Spatial Information is re-examining its industry's business model, as its once innovative approach is now appearing tired. As well as encouraging start-ups, existing businesses must be encouraged to reassess and renew their operations



to remain relevant while retaining the experience and services they offer the economy.

A number of collaborative initiatives involving industry groups, corporations, start-ups and academia are pursuing this goal, and PWC is talking to a number of Sydney universities. Innovation can spring from any source. Servcorp, for example, innovated in the seemingly mundane office supply market and grew into a highly profitable international company as a result. Their success could be replicated more often across Australia's service-dominated economy.

▶ **Collaboration Between Big Business and Start-Ups**

Start-ups more often fail through want of customers than capital. They need the customers which established organisations can provide, while older firms need the life blood of innovation produced by start-ups. Collaboration can therefore benefit both parties, with start-ups tapping into established distribution networks to quickly build a customer base.

Pollenizer works with start-ups in energy, health, and agriculture and sees large companies looking to work with new firms. Unfortunately, while these companies have well-established clienteles, they often lack the skills required to close funding

rounds and can crush the start-up through poor investment decisions. These large companies are often as much 'newbies' in getting new ventures off the ground as the start-ups they acquire or partner with.

StartMesh helps start-ups expand overseas by growing their customer base in return for commission on sales. Australia is not only an attractive place to live, but a good base for new companies.

▶ **Increasing Interest in Innovation**

Although problems remain, delegates were urged to be optimistic, as interest in the innovation agenda is growing. An innovation event with a Harvard professor four years ago struggled to find an audience, while a similar session would be sold out today. Discussions of the urgent need for innovation span more than two decades, but the situation today is much brighter than it was in the 1990s. More private equity is available, angel investor networks now exist, and some entrepreneurs are working at their third or fourth start-up as they reinvest successful outcomes from earlier ventures. Although it will never be easy, Australia has an ever more vibrant start-up scene, and credit should be given where it is due.

An inventory of innovation in Sydney uncovered many areas of activity, and enthusiasm for innovation in both state and federal politics runs unabated. However, just as Australia lacks a galvanising vision for its future, so Sydney needs a strategic plan to make the most of its disparate activities and resources. People's hearts must be won to gain support of the innovation agenda, as well as their heads, as the issue failed to resonate with the electorate during the last Australian federal election, and better ways must be found of engaging people beyond the intellectual debates of the elite.



▶ Risk Capital

Although Australia's apparent shortage of risk capital is often flagged as a problem, Australians gamble more on the Melbourne Cup (\$200 million, \$9 per capita) than the entire venture capital industry invests in start-ups in a year (\$100m, \$4.55 per capita)²⁷. The challenge is to shift that speculative spending in search of financial return away from horses and poker machines²⁸ and towards high tech.

BlueChilli has raised \$35 million for 45 companies over the last four years, a small contribution to a booming ecosystem. The situation is improving as more start-ups are created, but creating more incentives for more capital is only one part of the equation as more opportunities are required for that capital to feed. This can only be driven by encouraging more people to take risks, accepting that many will fail quickly, and not dissuading them from trying again. The USA has a huge venture capital industry, with more money deployed in Series A in New York last month than across the whole of Australia last year. However, the USA has 14 times Australia's population, and creating more incentives for start-ups to launch and safety nets for entrepreneurs if they fail will create more opportunities for capital to flow. Atlassian and REA now rival Qantas in size, and Australia must create more of these companies to guarantee a more prosperous future.

▶ Realistic Investment Returns

Australian investors have enjoyed annual average investment returns of 12% over the last hundred years through land speculation, rent seeking, population growth and primary industry booms. Resetting expectations to a more realistic 4%, in line with other developed economies such as Germany, would encourage more investment in innovative industries and end the private capital

'strike' which sees three quarters of profits returned as dividends, rather than reinvested more productively. State and federal governments appear too focused on short-term results, with little planning beyond the four-year estimates period, and a longer term view is required in politics as well as commerce. The difference between making money and creating wealth should be emphasised in the debate, as even senior business analysts focus only on short-term gain when reviewing incentives and the capital markets.

▶ Consumer Empowerment

Amid the talk of governments, academia and capital markets, the positive role which empowered consumers can play in driving innovation is often underplayed. Economists from Adam Smith onwards have understood the consumer role as the beating heart of economic activity. Australians are early adopters of gadgets, from VHS to tap-and-go payments today, and more attention should be given to the influence of consumers in rewarding innovation through their purchasing decisions.

Much of the progress underway is already consumer-led, as the commercial environment is increasingly shaped by informed consumers seeking and sharing information about products through social media and the internet. The sharing economy is becoming a significant factor, with companies such as Airbnb and Uber disrupting travel and transport. Young innovative workers will not stay at companies which fail to offer a supportive and forward-thinking culture.

Twenty-five years ago, a Small Business Council advising the government realised that consumer demand was the best way to improve the quality of Australian production. While not everyone can be an innovator, everyone is a consumer and can use their purchasing power to reward innovative entrants, or shun those which fall short.

▶ **Urgency and Curiosity**

Research suggests that the world is experiencing the fastest rates of economic and technological change in human history. The internet itself is already undergoing its third wave of evolution, as the interconnectivity of devices supersedes the earlier stages of infrastructure building and subsequent content creation and commercial exploitation. There has been no shortage of discussion of the need for reform, but every conference produces similar results while the world changes around it. Technology and trade are transforming more quickly than people appreciate, and Australia must respond quickly to compete. Innovation is no longer confined to specialised areas, such as Silicon Valley or Israel, but blooms around the world, empowered by Cloud computing, global access to information and the ability to build knowledge-based industries anywhere. A renewed sense of curiosity is therefore required of adults as well as children to examine everything they do for ways to improve.

The frantic pace of technological advance is matched only by its adoption by society, but speed of execution is vital to the success of any start-up, as many of them fail because their timing is wrong. BlueChilli has learned to launch businesses within months with a handful of people, testing concepts and validating ideas in the marketplace. With speed comes the risk of failure as the two are intrinsically linked, but entrepreneurs and innovators must be encouraged to run as quickly as they can, even if they have barely learned to walk, confident they can pick themselves up if they stumble.

▶ **Inclusion and Community**

Young workers yearn for a sense of place and purpose just as much as older generations, and trendy office concepts such as hot-desking do nothing to build commitment and community.

People cannot live their lives on email, and so workplaces must acknowledge their workers and allow them to feel part of something bigger than themselves.

While tertiary education offers many advantages, wisdom can spring from any source. It is absurd to think that innovation can only come from a particular group or set of institutions. Community settings to foster discussion and agility must tap the assets of everyone. Australia should not seek to replicate individualistic US attitudes, or ignore the dire and ever-present security threats which galvanise Israeli resourcefulness and resilience. Instead, it should build on its own ethos of mateship to craft a brighter, more innovative future for all.





LUNCH SESSION

Catherine Fritz-Kalish introduced Steven Hayes MBE to summarise the Summit's discussions.

Mr Stephen Hayes MBE
 Partner, Gravity Consulting
 Chief Executive Officer, StrategyDotZero

Mr Hayes thanked the Summit's presenters and delegates for the quality of their contributions and termed Parliament House as New South Wales' ultimate 'coffee house'. He praised Global Access Partners for its focus on action, before encapsulating the main points made.

Minister Robert's opening address reminded the Summit that innovation is a fundamental driver of economic growth, while Lucy Turnbull AO related the historical importance of London coffee houses to the agglomeration of knowledge work in Sydney today. Mr Hayes agreed that such spaces must be open to all and praised Prof Brian Schmidt AC for his commitment to university reform to adapt to educational change. He supported the value of peer-to-peer interaction over the traditional lecture, noting that digital provision will help Australians of all backgrounds enjoy the benefits of further education. The Australian Government's investment of almost \$200 billion in defence over the next ten years will generate significant opportunities for Australian industry, while safeguarding the country from growing regional threats.

After thanking Minister Roberts for hosting the event, the GAP team and steering committee for organising it, and its sponsors for their generous support, Mr Hayes acknowledged the Hon. Philip Ruddock's long service to the nation and his call for a new culture of confidence. Matt Wright's erudite explanation of the importance of place and



proximity to productivity and Andrea Boyd's impassioned plea for a domestic space industry were praised, and Mr Hayes asked GAP to advocate Australia's associate membership of the European Space Agency to the federal government. Dr Melis Senova underlined the need for purpose in innovation as well as the mindsets required to encourage creativity, while Sebastien Eckersley-Maslin offered three pillars of speed, empowerment and tolerance of failure as the foundation of start-up success.

The call for a national vision to transcend political differences and galvanise purposeful, unified action was echoed by several delegates, and Mr Hayes backed Kristin Stubbins' belief that Sydney should build on its strengths to become a global innovation hub. He praised Senator Conroy's contribution to public life, before thanking all involved again and bringing the Summit to a close.

APPENDICES

2016 GAP SUMMIT



SPACES OF AUSTRALIAN INNOVATION

A Vision for Australia
Global Access Partners 7th Annual Growth Summit

PROGRAMME

Day One – Thursday, 15 September 2016

Strangers Function Room
Parliament House of New South Wales
6 Macquarie St, Sydney

6:00pm	Pre-Dinner Drinks, Registration <i>Space to Play: Showcasing Australian Innovation</i>
7:00pm	Dinner
Opening Address	The Hon. Anthony Roberts MP NSW Minister for Industry, Resources and Energy
Keynote Address	<i>“Smart Cities – Communication, Engagement and Participation”</i> Ms Lucy Turnbull AO Chief Commissioner, Greater Sydney Commission
Keynote Address	<i>“Reimagining Universities in Contemporary Society”</i> Prof Brian Schmidt AC Vice Chancellor & President The Australian National University 2011 Nobel Laureate Physics
Welcome Address	The Hon. Christopher Pyne MP Minister for Defence Industry, Leader of the House Australian Government
9:25pm Closing Remarks	<i>“Spaces of Australian Innovation”</i> Ms Catherine Fritz-Kalish Co-founder & Managing Director Global Access Partners
9:30pm	Close



2016 GAP SUMMIT



SPACES OF AUSTRALIAN INNOVATION

A Vision for Australia

Global Access Partners 7th Annual Growth Summit

PROGRAMME

Day Two – Friday, 16 September 2016

Legislative Assembly Chamber
Parliament House of New South Wales
6 Macquarie St, Sydney

8:15am Registration

8:45am
Welcome & Introduction **Ms Catherine Fritz-Kalish**
Co-founder & Managing Director
Global Access Partners

9:00am
Session One ***'Head Space', Outer Space, Virtual and Beyond...
Creating spaces for Australian innovation***

Session Chair
The Hon. Philip Ruddock

"Why Space Matters"
Mr Matt Wright
Partner, Deloitte Access Economics

"Innovation in Outer Space & Opportunities for Australia"
Ms Andrea Boyd
Flight Operations Engineer, International Space Station, Cologne, Germany

"Head Space for Creativity and Innovation"
Dr Melis Senova
Founder, Huddle

9:45am Discussion

11:00am Morning Tea



2016 GAP SUMMIT

SPACES OF AUSTRALIAN INNOVATION

A Vision for Australia

Global Access Partners 7th Annual Growth Summit

PROGRAMME

Day Two – Friday, 16 September 2016

Legislative Assembly Chamber
Parliament House of New South Wales
Macquarie St, Sydney

11:30am
Session Two

How can Australia win the 'space race' to become a global innovation hub?

Session Chair

Senator, the Hon. Stephen Conroy

Deputy Leader of the Opposition in the Senate
Shadow Special Minister of State, Shadow Minister for Sport

"Three Pillars of Building a Culture of Innovation"

Mr Sebastien Eckersley-Maslin

Founder & Chief Executive Officer, BlueChilli

"Sydney as a Regional Innovation Hub"

Ms Kristin Stubbins

Partner, PricewaterhouseCoopers

12:00pm

Discussion

12:55pm

Break

1:00pm

Lunch

Strangers Function Room
Parliament House of New South Wales

2:20pm

Summary of Outcomes

Mr Stephen Hayes MBE

Partner, Gravity Consulting
Chief Executive Officer, StrategyDotZero

2:30pm

Vote of Thanks & Close



SPEAKERS PROFILES

Ms Andrea Boyd
Flight Operations Engineer
International Space Station
Cologne, Germany

Andrea Boyd is stationed at the European Astronaut Centre, the only Australian International Space Station (ISS) Flight Controller on Earth. A Mechatronic Engineer from The University of Adelaide, Andrea spent years working as an Automation Engineer for many industries, on site as a FIFO Mining Engineer underground and end-to-end process plant in the central Australian desert. Andrea certified as an ISS Flight Operations Engineer for payload control and cross-certified in later years for crew operations, serving in the European Space Agency's Human Spaceflight and Robotic Exploration Directorate.

Senator, the Hon. Stephen Conroy
Deputy Leader of the Opposition in the Senate
Shadow Special Minister of State
Shadow Minister for Sport

Stephen was born into an Air Force family in Ely, United Kingdom. Stephen's family moved to Canberra when he was 10, and he went on to graduate from the Australian National University with a Bachelor of Economics. Stephen joined the Labor Party in 1983 to turn his concerns about equality of opportunity and economic justice into action. Stephen moved to Melbourne and worked at the Transport Workers' Union, and in 1993 he was elected to Footscray City Council, where he developed an interest in transport and communication issues. Following the resignation of Gareth Evans, Stephen was appointed to the

Senate and served as the Minister responsible for communications and the rollout of the National Broadband Network from 2007 to 2013. Stephen and his wife live in western Melbourne with their daughter. He was a national volleyball representative as a teenager and has been the President of Volleyball Victoria since 2004. Stephen barracks for Collingwood in the AFL and Melbourne Heart in the A-League, and he still pulls on the boots to play soccer when he has time.

Mr Sebastien Eckersley-Maslin
Founder & Chief Executive Officer
BlueChilli

Sebastien Eckersley-Maslin launched BlueChilli in 2010, frustrated by the Australian economy's unhealthy bias on investing in the resources and property sectors. Through his revolutionary venture technology concept, Sebastien has redesigned the business model for the early-stage investment and development of technology start-ups. BlueChilli works with non-technical entrepreneurs, investors and corporate customers to build, grow and invest in great new tech start-up ventures. The company's goal is to build a start-up portfolio valued in excess of AU\$1 billion by 2020. Headquartered in Sydney, with incubator spaces in Sydney, Melbourne and Brisbane, the company has portfolio start-ups in most Australian capitals, the US and Canada. BlueChilli invests technology IP, expert advice and early-stage funding in the start-ups it creates via a rigorous accelerator program curriculum, a dedicated product development team and the AU\$ 10m BlueChilli Venture Fund, one of the few funds to gain ESVCLP status in Australia

since 2007. Sebastien has received many awards, including E&Y 'Entrepreneur of the Year' finalist in 2013, three-time Anthill 30 under 30 recipient, most inspirational engineer nominee for IEAust and top postgraduate researcher at UNSW in 2007 for his patented technology in landing UAVs autonomously on warships.

Ms Catherine Fritz-Kalish
Co-Founder & Managing Director
Global Access Partners

Catherine Fritz-Kalish is Co-Founder and Managing Director of Global Access Partners (GAP). Over the last 15 years, under Catherine's guidance, GAP has grown to be a proactive and influential network which initiates high-level discussions at the cutting edge of the most pressing commercial, social and global issues of today. Through forums, global congresses, annual summits and government advisory boards, GAP facilitates real and lasting change for its stakeholders, partners and delegates by sharing knowledge and creating input for government policy. Over the past few years, GAP has established a number of national consultative committees and taskforces which are working to shape the face of the Australian business and policy environment. Catherine's broader business experience includes coordination of a number of international initiatives as part of the annual programme for the small and medium sized enterprise unit of the OECD, at headquarters in Paris; marketing and brand management within all seven divisions of the George Weston Foods Group; and just prior to establishing GAP, working within the TCG Group of companies, particularly in the area of start-up incubator establishment. Catherine holds a Bachelor of Science degree from the University of New South Wales and a Masters of Business in International Marketing from the University of Technology, Sydney.

Catherine has three children and is passionate about helping those less fortunate. She sits on the board of social justice charity Stand Up; co-founded *Thread Together* which provides brand new clothing to disadvantaged communities across Australia; and is part of a significant giving circle which engages whole families in the act of giving to those in need.

Mr Stephen Hayes MBE
GAP Taskforce on Leadership in Education
Partner, Gravity Consulting
Chief Executive Officer, StrategyDotZero

Stephen Hayes MBE is a Partner with Gravity Consulting and the Chief Executive Officer of their product company StrategyDotZero (www.strategydotzero.com). Stephen is internationally recognised as the founding Managing Director and Chief Executive of the International Centre for Complex Project Management. He was also Chair of the International Taskforce that developed the widely acclaimed report '*Complex Project Management – Global Perspectives and the Strategic Agenda to 2025*' and the founding Chair of the International Complex Project Management Research Council. Building on his extensive industry expertise, Stephen continues to support government and industry in the successful delivery of complex endeavours, including the transformation of strategy execution and business performance. Stephen has a number of philanthropic interests and is passionate about education and innovation. He is currently Chair of the Global Access Partners Taskforce on Leadership in Education. He also provides strategic advice as a member of a number of corporate boards that have included the Corporate Advisory Group of Victoria Police and Queensland University of Technology's Graduate School of Business.



The Hon. Christopher Pyne MP
Minister for Defence Industry
Leader of the House
Australian Government

Christopher Pyne was elected to the House of Representatives for the seat of Sturt in 1993 at the age of 25. Christopher is the Minister for Defence Industry and Leader of the House of Representatives. As Minister for Defence Industry, Christopher is responsible for delivering the \$195 billion worth of investment in Australia's defence capabilities outlined in the Defence White Paper and ensuring the nation grasps this once in a generation opportunity, maximising job creation and economic growth. In his time in Parliament he has also served as Minister for Industry, Innovation and Science, developing and delivering the National Innovation and Science Agenda, a transformative economic plan to encourage Australians to embrace risk and commercialise their ideas. Christopher also spent two years as Minister for Education and Training, and in this role, amongst other things, he reformed the National Curriculum, introduced compulsory literacy and numeracy testing for Australian teaching graduates and expanded phonics teaching in remote schools in northern Australia. In addition to these Cabinet positions, he has also served as Minister for Ageing and Parliamentary Secretary for Health in the Howard Government. As Parliamentary Secretary for Health, he founded "headspace: the Youth Mental Health Initiative" in 2006. Christopher is the author of the bestselling book, *"A Letter to My Children"*, published by Melbourne University Press in 2015. Before entering Parliament, Christopher practised as a solicitor. Christopher is a member of many community, social and sporting groups in his electorate, and is an Adelaide Crows Ambassador and supporter of the Norwood Redlegs Football Club. He is married to Carolyn and is the proud father of Eleanor, Barnaby, Felix and Aurelia.

The Hon. Anthony Roberts MP
Minister for Industry, Resources and Energy
NSW Government

The Hon. Anthony Roberts MP is the NSW Minister for Industry, Resources and Energy. In addition, Anthony is Leader of the House in the NSW Legislative Assembly where he is responsible for the Government's legislative agenda. Elected as the Member for Lane Cove in 2003, Anthony has previously served as the Minister for Fair Trading as well as several Shadow Portfolios, including Emergency Services, Juvenile Justice, Citizenship, Volunteering and the Arts. In his capacity as Minister for Industry he has been tasked with running the newly-created super-department of Industry, Regional Development and Skills, and is leading the Government's commitment of creating 150,000 new jobs over the next four years. Anthony attended the University of Technology, Sydney, where he studied business and served as President of the UTS Union. Prior to becoming a Member of the NSW Parliament, he served as Mayor of Lane Cove Municipal Council and was an advisor to former Prime Minister John Howard. A former Captain in the Australian Army Reserves, Anthony proudly served in peace keeping operations in Bougainville as part of Operation Bel Isi.

The Hon. Philip Ruddock MP

Philip Ruddock was first elected to the House of Representatives as the Member for Parramatta, New South Wales, at a by-election on 22nd September 1973. Since 1992 until the present, he has held the seat of Berowra. The electorate of Berowra blends high-density suburban areas with a semi-rural fringe. Having held a number of Shadow Ministry portfolios, Mr Ruddock was appointed Minister for Immigration and Multicultural Affairs from 11th March 1996 through to 7th October

2003. This made him the longest-serving Federal Immigration Minister. During this period, he also had responsibility for Reconciliation and Aboriginal and Torres Strait Islander Affairs. On 7th October 2003, he was sworn in as the Federal Attorney-General, an appointment he held until the Federal Election on 3rd December 2007. Following the election of the Coalition Government, Mr Ruddock held the position Chief Government Whip from September 2013 until February 2015. On 26th May 2015, the Prime Minister appointed Mr Ruddock as Special Envoy for Citizenship and Community Engagement. He has wide committee experience, having served on the Joint Standing Committee on Foreign Affairs, Defence and Trade; the Joint Standing committee on Intelligence and Security; Coalition Foreign Policy and Defence Committee; and Coalition Legal and Immigration Committee. Mr Ruddock served as Chair of the Human Rights subcommittee of the Joint Standing Committee of Foreign Affairs Defence & Trade, and the Joint Standing Committee on Human Rights. He was also a Member of the Joint Committee on Corporations & Financial Services. With degrees in Arts and Law from Sydney University, Mr Ruddock practised law prior to entering parliament. He lives in Pennant Hills with his wife, Heather.

Prof Brian Schmidt AC
Vice-Chancellor & President
The Australian National University
2011 Nobel Laureate Physics

Professor Brian P. Schmidt was appointed Vice-Chancellor and President of The Australian National University (ANU) in January 2016. Professor Schmidt is the 12th Vice-Chancellor of The Australian National University (ANU). Winner of the 2011 Nobel Prize in Physics, Professor Schmidt was an astrophysicist at the ANU Mount Stromlo Observatory and Research School of Astronomy and Astrophysics before

becoming Vice-Chancellor. Professor Schmidt received undergraduate degrees in Astronomy and Physics from the University of Arizona in 1989, and completed his Astronomy Master's degree (1992) and PhD (1993) from Harvard University. Under his leadership, in 1998, the High-Z Supernova Search team made the startling discovery that the expansion rate of the Universe is accelerating. Fellow of the Australian Academy of Science, The United States Academy of Science, and the Royal Society, he was made a Companion of the Order of Australia in 2013.

Dr Melis Senova
Founder
Huddle

Melis is a pioneer in design thinking, a founder of her own global strategic design consultancy, Huddle, and a highly-regarded and enterprising thought leader. Her vast business experience, underpinned by a PhD in Human Factors (user-centred design), sees her focused on human-centred design for the transformation of service, culture, communities and business—committed to making a positive change to humanity. Melis is an inspirational visionary —ardently immersing her mind in new and innovative thought, collaborating with other influential change makers on a global scale and leading businesses towards exciting and ground-breaking frontiers through the power of design. Melis is also the founder of Huddle Labs, a research capability innovating the definition of value in a post-capitalist society, Huddle Academy, a school focused on building creative problem solving capabilities for individuals and organisations and Huddle Foundation, a platform that curates the connection between designers, philanthropists and social enterprises.



Ms Kristin Stubbins

Partner
PricewaterhouseCoopers

Kristin is PwC Australia's market segments leader, responsible for driving the market growth strategy of the business. She is passionate about innovation and plays an important role as a "bridge" between new innovative offerings within PwC and its more traditional service offerings and markets. Kristin chairs a GAP Taskforce comprised of key government representatives, startups, large businesses and investors with the purpose of developing the strategic plan for Sydney as an innovation hub. She is also leading some key assignments to assist the Australian government with its innovation agenda. Kristin provides assurance and advisory services to many PwC clients in both the private (ASX listed and private equity) and public sectors. She has been an adviser to some of Australia's largest companies and government agencies and departments. Kristin has been a member of the editorial panel for the Australian Financial Review's CFO Magazine. For six years, she has served on the Board of Directors of YWCA NSW, a not-for-profit organisation supporting people when they are at their most vulnerable. In 2011, Kristin was appointed to the Expert Panel as a financial expert, advising the NSW Government on coastal erosion. In December 2012, Kristin was appointed to the Board of the South East Sydney Local Health District and was subsequently appointed Chair of the Finance and Performance Committee.

Ms Lucy Turnbull AO

Chief Commissioner
Greater Sydney Commission

Lucy Hughes Turnbull AO is an urbanist, businesswoman and philanthropist with a longstanding interest in cities, and technological and

social innovation. She chaired the Committee for Sydney from 2012 to 2015 and has been appointed Chief Commissioner of the new Greater Sydney Commission, tasked by the NSW Government to assist in delivering strong and effective strategic planning for the whole of metropolitan Sydney. She is Chairman of Prima BioMed Limited, an ASX-listed biomedical company undertaking clinical development for an immuno-therapeutic cancer treatment, and is a board member of the Grattan Institute. She was the first female Lord Mayor of the City of Sydney from 2003/04, and in 2011 she became an Officer of the Order of Australia for distinguished service to the community, local government and business. In 2012, she was awarded an honorary Doctorate of Business by the University of NSW.

Mr Matt Wright

Director
Deloitte Access Economics

Matt is well regarded for his leadership in the design and analysis of some of Australia's most significant and contemporary education and training policies and programs. This significant body of work – including with the Victorian, South Australian, Queensland and Commonwealth education and training departments – covers a wide range of aspects of Australian schooling, vocational training and higher education. Matt specialises in social policy design and evaluation, and applied economic research, analysis and modelling. He has a unique ability to combine this economic and evaluative expertise with frameworks for strategy formation. In 2015, Matt co-authored a piece of thought leadership with Professor Ian Harper titled '*Building the Lucky Country #5: The Purpose of Place Reconsidered*'.

SPONSORS PROFILES



Australian Government

Department of Education and Training

The Australian Government Department of Education and Training is responsible for national policies and programmes that help Australians access quality early childhood education, school education, higher education, and vocational education and training, as well as supporting international education and research.

www.education.gov.au



Australian Government
Department of Employment

The Australian Government Department of Employment is responsible for national policies and programmes that help Australians find and keep employment and work in safe, fair and productive workplaces.

The Department of Employment is currently undertaking work to understand and respond to the impact of rapid technological advancements, new business and employment models, increasing globalisation and social change on employment and workplace relations.

As part of this work, the Department partnered with the CSIRO on the report '*Tomorrow's Digitally Enabled Workforce*'. The report is an important foundation for policy makers grappling with the future of work in Australia. It underpins work being undertaken in the department to develop future-focused strategies that enable people and organisations to take advantage of emerging opportunities.

We want every Australian to have the opportunity to get ahead and build better lives for themselves and their families, and we want employers to have the confidence to grow their businesses and hire new employees.

Events such as the Global Access Partners Economic Summit are instrumental in progressing this work.

www.employment.gov.au



Australian Government
Department of Social Services

The Department of Social Services has responsibility for families, housing, social services and disability services.

The Department of Social Services helps to support families and children through programs and services and benefits and payments. Further assistance is provided through grants and funding for organisations providing services for families. The Department also helps to support Australians' mental health.

www.dss.gov.au



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Chartered Accountants Australia and New Zealand is a professional body comprised of over 115,000 diverse, talented and financially astute members who utilise their skills every day to make a difference for businesses the world over.

Members are known for their professional integrity, principled judgment, financial discipline and a forward-looking approach to business which contributes to the prosperity of our nations.

We focus on the education and lifelong learning of our members and engage in advocacy and thought leadership in areas of public interest that impact the economy and domestic and international capital markets.

We are a member of the International Federation of Accountants and are connected globally through the 1,000,000-strong Global Accounting Alliance and Chartered Accountants Worldwide which brings together leading Institutes in Australia, England and Wales, Ireland, New Zealand, Scotland and South Africa to support and promote over 320,000 Chartered Accountants in more than 180 countries.

www.charteredaccountantsanz.com



Cognizant (NASDAQ: CTSI) is a leading provider of information technology, consulting, and business process outsourcing services, dedicated to helping the world's leading companies build stronger businesses. Headquartered in Teaneck, New Jersey (U.S.), Cognizant combines a passion for client satisfaction, technology innovation, deep industry and business process expertise, with a global, collaborative workforce that embodies the future of work. With over 100 development and delivery centres worldwide and approximately 244,300 employees as of June 30, 2016, Cognizant is a member of the NASDAQ-100, the S&P 500, the Forbes Global 2000, and the Fortune 500 and is ranked among the top performing and fastest growing companies in the world.

A client-first culture. As one of the fastest growing companies in Australia, our clients continually benefit from our award-winning client-first culture. Our delivery pedigree and relentless focus on client satisfaction has been recognized by leading industry analysts. We deliver a distinctly superior experience to our clients in Australia by nurturing strong relationships, continuing our investments in industry-leading processes and building strong local teams and capabilities.

We understand both business and IT. Our unique position as both a recognized consulting, business process outsourcing services and IT outsourcing player in various sectors ensures that we do not approach customer challenges as simply technology projects.

Keep challenging. At Cognizant, we believe those who challenge the way they work today will lead the way tomorrow. It's in our DNA—the people of Cognizant bring new ideas, inspiration and passion to help clients succeed in a changing business environment.

Innovation. Clients have a dual mandate: Run better for efficiency; Run different for growth. Cognizant is innovating new ways of doing business, experimenting with emerging technologies and business models. Our innovation initiatives tackle the dual mandate and bring our clients the best technology and business expertise in today's digital world.

Digital strategy. Cognizant partners with clients to create business strategies and define new digital business models, enabling the enterprise for a new era of digital engagement with your customers, partners and employees. From doing digital to being digital.

www.cognizant.com/australia



Edith Cowan University (ECU) is a large, multi-campus institution serving communities in Western Australia and internationally. At ECU we are guided by the values of integrity, respect, rational inquiry and personal excellence. Established in 1991, ECU has grown rapidly into a quality university with excellent student satisfaction and a focus on teaching and research.

ECU produces research at exacting international standards that extends knowledge and improves the quality of life for Australians and people around the world by focusing on solving real problems across the social, economic, physical and environmental spectrums.

Students and graduates at ECU are identified amongst the best in the world, with many fulfilling critical roles in our society. Their outstanding achievements have been recognised throughout Australia and internationally through awards, grants, scholarships and prizes.

ECU is committed to breaking down barriers that restrict entry to education through enhancement and development of alternative entry pathways into higher education.

In collaboration with the Emirates Group, ECU has established the ECU-Emirates Centre of Aviation & Security Studies (CASS) in Dubai for the delivery of specialised programs and research. Through this alliance, ECU has positioned itself as one of the pioneers in enhancing education standards for the global aviation industry. The programs are affiliated with the International Civil Aviation Authority.

ECU's collaboration with the Emirates Group was recognised by a 2006 Business/Higher Education Round Table (B-HERT) award for Best International Collaboration — Education and Training — Enhancing Security in an Increasingly Interdependent World.

Since the establishment of the partnership in 2003, CASS has graduated over 1,100 students with ECU diplomas.

www.ecu.edu.au



The Centre of Aviation and Security Studies (CASS) is an integral business unit of the Emirates Group Security (EGS) with the prime focus on research and education. CASS is strategically positioned at the EGS Head Quarters in Dubai with state-of-the-art infrastructure and operational scope spanning Australia, Canada and South East Asia.

CASS is run in close partnership with ECU and provides high-quality, university-affiliated academic courses in Aviation Security, Private/Public Security, Border Control, Aviation Operations and Ground Handling.

CASS has developed strong alliances with leading international universities, Immigration and Law Enforcement agencies from around the world, and these partnerships provide unique synergies to CASS in developing focused research initiatives and industry driven education programmes certified by ECU.

CASS provides a range of educational options and is the home for delivering various diploma programmes offered by ECU, which include the Diploma in Aviation Security Management and the Diploma in Ground Handling. Apart from the tertiary courses, CASS also offers short courses in Aviation Security, Cargo Security, Forgery Detection, Profile Screening, Crisis Management and many more. In addition to its education services, CASS is also developing into a regional hub for research in security and aviation.

CASS works closely with international organisations such as the International Civil Aviation Organization (ICAO), International Professional Security Association (IPSA), General Civil Aviation Authority (GCAA) and American Society for Industrial Security (ASIS) to enhance their programmes.

www.emiratesgroupsecurity.com



Global Access Partners Pty Ltd (GAP) is an independent non-profit institute for active policy that initiates strategic discussions on the most pressing social, economic and structural issues and challenges facing Australia today.

Through its pioneering '*Second Track*' process, GAP seeks to foster links between community, government, industry and academia to increase stakeholder participation in the development of government policy and promote novel, cross-disciplinary approaches to regulatory problems.

GAP runs multidisciplinary taskforces, forums, conferences, seminars, consultative committees, research and feasibility studies, online collaboration and executive consultancy both internationally and in Australia.

The GAP alumni network comprises 3,500 members, with more than 730 people actively engaged in various GAP projects on a regular basis. They include ministerial representatives, heads of government, senior business executives and university vice chancellors.

GAP's blogging site, Open Forum, is a well-established platform with an extensive community network, uniquely positioned to attract and engage target audience and informed contributions.

GAP's partners include Federal and State governments, major corporate enterprises and industry bodies. Every dollar invested by government in GAP initiatives leverages two dollars from the private sector.

www.globalaccesspartners.org



Gravity is a global innovation consulting firm. We partner with organisations and governments to design products and services that create impact across industries in local and global contexts.

We challenge established ways of addressing business complexity by drawing from different domains and design solutions rooted in research and collaboration.

We help build product and service ecosystems that engage users and create value for organisations. We also help companies foster a culture of innovation to grow and stay relevant.

www.gravityconsulting.com.au



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Hewlett Packard Enterprise (HPE) is an industry leading technology company that enables customers to go further, faster.

With the industry's most comprehensive portfolio, spanning the cloud to the data centre to workplace applications, our technology and services help customers around the world make IT more efficient, more productive and more secure.

www.hpe.com



HERBERT
SMITH
FREEHILLS

Herbert Smith Freehills are delighted to have the opportunity to take part in this year's Global Access Partners (GAP) Annual Growth Summit.

We are proud to participate and support GAP's vision to bring together a diverse group of individuals to provoke thoughtful discussion on topical social issues facing Australians and the wider regional community.

These discussions on the future of jobs will impact both our clients and members of the broader HSF community. Investing in programs which shape the development of government policy provides us with the unique opportunity to be involved in the gestation of these new ideas and helps us be aware of both new commercial opportunities and risks.

As a global law firm, we are consistently recognised as a leading team in capital markets, mergers and acquisitions, dispute resolution and other key areas of commercial legal services. We are focused on ensuring commercial outcomes for our clients and delivering a premium service and exceptional client experience.

www.herbertsmithfreehills.com



Open Forum (www.openforum.com.au) is an independent, interactive online community focused on the issues which matter to Australia's public policy debate.

The forum was initiated by Global Access Partners in July 2007. Our bloggers and readers include people of all ages, from all over Australia and from all political spheres. Open Forum's network features senior business executives, government policy makers, academics, thought leaders and community advocates, as well as interested private citizens.

Open Forum is staunchly non-partisan. We believe this independence is fundamental to the success of any policy development forum. Our user-generated content allows us to explore areas which are of relevance to the regulatory process, track citizen sentiment around particular issues and use these as the basis for briefing notes and recommendations to government agencies.

www.openforum.com.au



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Open Forum 'Spaces of Australian Innovation' Blogs 2016

- Peer learning with shoulders, not precincts - by Pete Cooper;
<http://openforum.com.au/peer-learning-shoulders-not-precincts>
- Intercultural innovation: Leveraging multi-cultural thinking - by Frank Wyatt and Lynda Ford;
<http://openforum.com.au/intercultural-innovation-leveraging-multi-cultural-thinking>
- What we really need from innovation in Australia - by Ron Johnston;
<http://openforum.com.au/what-we-really-need-innovation-australia>
- Australia's innovation future and how to harness it - by Charles Nightingale;
<http://openforum.com.au/australia-innovation-future-how-to-harness-it>
- A whole of government approach to digital transformation - by Jon Cumming;
<http://openforum.com.au/whole-of-Government%20approach-digital-transformation>
- The creative asset you're probably ignoring right now - by Michael McQueen;
<http://openforum.com.au/creative-asset-youre-probably-ignoring-right-now>
- Being careful with certainty - by Dr Melis Senova;
<http://openforum.com.au/being-careful-with-certainty>



ENDNOTES

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https://federation.dpmc.gov.au/sites/default/files/publications/reform_of_the_federation_discussion_paper.pdf
- ¹² NASA alone absorbed 4.41% of the American federal budget in 1966. NASA currently accounts for about 0.5% of federal spending, according to figures from the Office of Management and Budget.
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- ¹⁶ Department of Industry, Innovation and Science (2015), Australian Innovation System Report 2015,
<http://www.industry.gov.au/Office-of-the-Chief-Economist/Publications/Pages/Australian-Innovation-System.aspx>
- ¹⁷ The coffee houses were places where 'intellectuals, professionals and merchants thronged...to debate, distribute pamphlets, do deals, smoke clay pipes and drink coffee rather than ale'. Lloyds of London began in 1688 at Edward Lloyd's coffee house; in 1698, the owner of Jonathan's coffee house started the London Stock Exchange (<http://www.history.co.uk>); in 1771, senior engineers began holding dinner meetings at the Kings Head Tavern which led to the Society of Civil Engineers (Rogers and Port, 2002). Source – Dr P. Massingham, University of Wollongong
- ¹⁸ Australian Bureau of Statistics, 2015
- ¹⁹ Centre for Defence Industry Capability, <http://www.defencesa.com/defence-industry/centre-for-defence-industry-capability>
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- ²⁸ Annual per capita spending on gambling and poker machines in New South Wales is \$1200 — 22% above the national average - <http://www.bandt.com.au/marketing/15-things-you-didnt-know-about-the-melbourne-cup>