Innovation Policy Report

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The Australian Public Service engages with academics and researchers

Australian academics and researchers have much to offer governments as a source of new and insightful knowledge. Collaborative engagement between the public sector, academics and researchers can be beneficial for all parties. For government agencies, academics and researchers are able to provide insight and ideas to contribute to innovative policy initiatives. For academics and researchers, engagement with government officials provides an opportunity to gain a greater understanding of current strategic public policy issues and directions. Collaboration can both improve the quality of public policy and enhance the strategic direction of academic research.

The importance of partnerships/collaboration in fostering innovation is internationally recognised, with countries such as the United Kingdom and the United States having policy objectives in this area.

A key objective of the EU's Innovation Union initiative is to revolutionise the way that public and private sectors work together in collaborative innovation partnerships. Horizon 2020, the EU's new program for research and innovation under Innovation Union, is due to commence in 2014 with an €80 billion budget, and aims to tackle critical societal challenges by strengthening the EU's research capabilities and bridging the gaps between industry, researchers and academics and government.

A strong national research base and a culture of collaboration are national innovation priorities in the Government's innovation agenda, *Powering Ideas: An Innovation Agenda for the 21st Century*. *Empowering Change: Fostering Innovation in the Australian Public Service* also outlines the value of collaboration between the Australian Public Service (APS) and academics, stating that these types of partnerships "…have the potential to boost the quality and speed of innovative effort in the public sector". The *APS Innovation Action Plan* sets up a framework for programs, forums and tools to create a more innovative public service, recognising that collaboration and partnerships are central to achieving innovation.

An example of the Australian Government's commitment to strategic collaboration with researchers and academics is the HC Coombs Policy Forum. The Forum provides opportunities for researchers to conduct policy-relevant exploratory and experimental work in partnership with government by setting mutually agreed objectives. Forum participants use past experiences and horizon scanning to enable preparation for future challenges and opportunities. Forum staff are in constant formal and informal dialogue with senior departmental staff to brainstorm ideas and so respond to new policy directions.

Two examples of areas where government can collaborate with researchers include closed door discussions on policy issues prior to their announcement, and allowing greater access to government datasets for academics.

The Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education is engaged in a range of activities with academics and

researchers. This is to ensure policies are well-informed by research, and to alert academics of government research priorities so that they can focus their work accordingly.

Collaboration through workshops, forums and partnerships

Workshops, forums, and partnerships that bring together academics and public servants are an important vehicle to encourage researcher-government discussion, and an invaluable source of research to inform policy.

The Department has organised a range of such forums, with most dedicated to addressing a specific issue and/or research methodology. In addition, they provide a safe and collaborative environment for researchers and government officials to come together and build stronger and more productive relationships.

The first Innovation Academics' Workshop was held as part of Innovation Week on 5 June 2012. It brought together over 30 academics and public servants for a dialogue on collaboration and innovation in the public sector. Academic participants shared their areas of expertise, including evidence of existing successful collaborative projects with government. However, it was acknowledged that, while some academics had strong and productive relationships with the government, most felt that their expertise was under-utilised. It was agreed that it is important to showcase examples of successful collaboration, as well as to identify and establish further opportunities for productive engagement.

A feasibility study on research impact assessment was undertaken by the Department in 2012. The study included two workshops and support for the 2012 Excellence in Innovation for Australia trial undertaken by the Australian Technology Network and Group of Eight universities. During 2013, the Department will gain further access to academic expertise through two new projects: one on university engagement metrics (being undertaken by NewSouth Innovations) and one on research impact case studies (being undertaken by Charles Sturt University).

The second Innovation Academic's Workshop 'Collaboration Challenges for Innovation in Australia', held on 4 December 2012, featured a series of presentations from academics and public servants sharing their experiences and knowledge of cross-sector collaboration in practice, and a discussion on the challenges for cross-sector collaboration in the area of innovation research. The Workshop participants identified opportunities to enhance collaboration between academics and government. It was agreed that it is important to:

- continue developing a mutual understanding of both sectors' interests, needs, and processes;
- build long-term relationships built on mutual trust; and
- develop long-term policy and research work plans across both sectors.

The Department is also working with the Australian Public Service Commission (APSC) and the HC Coombs Policy Forum to trial the Future Perspectives policy foresight forums. These fora bring together senior members of the Public Service and senior research academics from the Australian National University to consider long-term strategic challenges to Australia. Held on 30 April 2013, the first forum helped participants to build networks and gain an appreciation and insight into the strengths and expertise of policy makers and research academics to inform, anticipate and address the public challenges of the future.

The next forum is scheduled for 26 July 2013, where participants will discuss issues surrounding Big Data and its implications for Australia over the next 10-20 years. The Future Perspectives Forums complement strategic foresight activities being conducted by the APSC as part of the APS 200 Project: The Place of Science in Policy Development in the Public Service, as well as furthering the work of the department to link the APS with academic researchers.

A roundtable discussion bringing together innovation academics and departmental representatives was held on 28 March 2013 focused on measuring Australia's performance against the world's top ten innovation systems. The academics provided insight about the methods of measuring the national innovation system targets proposed and how these methods can help to identify useful policies for Australia, in addition to discussing alternative measurement methods.

The third Innovation Academics' Workshop on 'Evaluation and Innovation' was held on 23 May 2013. It focused on developing a better understanding of the evaluation of innovation – how its impact could be better measured, and how this could be used to influence new programs and policy. Topics suggested for future workshops include linking productivity and innovation outcomes, procurement and innovation, absorption of overseas originated innovation, cross-industry and cross-sector diffusion, and measuring innovation systems. It was recommended that future workshops have wider inclusion of government departments, and a discussion on research meeting industry needs.

The Australian Public Sector Innovation Indicators Project brought researchers with technical expertise together with public servants to develop a methodology for measuring innovation in the public sector, and provide information on the innovation performance and capacity of agencies to assist the management of innovation in the APS. The Department led on the project, policy development and technical and stakeholder liaison, and the Australian Innovation Research Centre (AIRC) at the University of Tasmania led the development of an innovation-specific questionnaire. The APSC conducted the pilot survey and contributed innovation data from its State of the Service

surveys. Subsequent analysis of the survey data was undertaken by the AIRC and the Department. The Australia Bureau of Statistics contributed its technical expertise throughout the project. The AIRC and the Department also collaborated in the joint reporting of the project's outcome at an Expert Meeting on measuring public sector innovation at the OECD and in the joint publications on the project's findings in peer reviewed journals and semi-formal literature.

Facilitating access to and sharing of research information within and across departments

The Department has introduced two initiatives as part of its Strategic Research Network (SRN) to maximise its use of research to inform policy and build networks with academia, research institutions and businesses. The first is the new electronic Knowledge Management System which acts as a central repository for all policy-relevant research available across the Department. The second is the Open Innovation portal which provides a convenient entry point for the academic community and interested public to share policy-relevant research with the Department. SRN also hosts presentations and workshops to promote opportunities for engaging with the research community.

As part of its implementation of the APS 200 Science in Policy project, the Department is collating a whole-of-government inventory of the many ways that departments and agencies engage science and scientists in their internal frameworks and policies. Key mechanisms for such engagements have also been examined in a recent HC Coombs Policy Forum report, *Science for Policy: Mapping Australian Government Investments and Institutions*. The report, done in collaboration with the Department, aims to assist public servants in making informed evidence-based decisions, while also having the potential to assist researchers who are seeking to engage more effectively with government.

Australian Developments

Departmental visit to China and Korea

Two departmental officials visited South Korea 14-17 May and five visited China 18-26 May 2013 to meet with government, academic and industry with a view to:

- Share knowledge on innovation systems, policies and programs;
- Promote key Australian innovation policies and programs including the R&D Tax Incentive and the Venture Australia initiative;
- Identify potential synergies and opportunities for future collaboration/engagement; and
- Build relationships with key people including overseas counsellors and Austrade officials, government, business and academia.

The China component was integrated with the Australian National University, Crawford School's 'China 360' immersion study tour.

The delegation found that there is respect for, and awareness of, Australia's Nobel Prizes and research capabilities, and a genuine interest in partnering with innovative Australian projects. Both China and Korea are seeking to build knowledge based and value-added industry. In China, Australia is competing for attention with many other countries.seeking partnerships and so we need totarget clear messages to Chinese audiences and increase our promotion of Australian areas of strength and priority.

The Department is working closely with Austrade to develop consistent innovation investment promotion and trade opportunities.

Visits from Asian countries

During June and July, the Department attended a function at the Chinese embassy where awards were given to a number of Australians for their contributions to China. Also, the Department has hosted a number of visits from Asian countries interested in our industry framework settings, our innovation policies and opportunities for ongoing partnering.

The visitors to the Department included Chinese small and medium sized businesses, a Vietnamese delegation that signed a further Agreement on Scientific and Technological Cooperation, and a Taiwanese delegation including Mr York, Yaw-Chung LIAO, Director-General, Department of Economics, Energy and Agriculture, Executive Yuan (Cabinet), ROC (Taiwan).

The series of meetings highlightedinterest in Australian investment opportunities, educationand future collaboration potential with Australians.

Scandinavian countries – measuring innovation

A visit by a departmental officer to Europe in June 2013 included meetings with the UK's Technology Strategy Board, and government representatives from Sweden and Finland.

- The UK, Sweden and Finland recognise that assistance to companies needs more than just funding, and are introducing phased support programs that offer differing levels of support and financial assistance (similar to Commercialisation Australia).
- The level of collaboration, especially between researchers and industry, is considered a major problem in each country.
- The UK is expanding its SBRI program by mandating that certain departments spend a proportion of their procurement budget on the program. This aligns with the approach in the USA.
- In Sweden, the top two barriers to growth are access to finance, and poor management of innovation in business.
- The Finish Government will introduce an R&D tax concession, but only for two years.

Sweden and Finland were particularly interested in measuring the impact of innovation, and were looking for new measure methodologiess. While Scandinavian countries consistently outperform most other countries on their R&D investment, some were struggling to see significant outcomes from that investment.

XXIV ISPIM Conference "Innovating in Global Markets: Challenges for Sustainable Growth"

Dr Chris Nedin participated in the XXIV International Symposium on Professional Innovation Management (ISPIM) Conference "Innovating in Global Markets: Challenges for Sustainable Growth" in Helsinki, Finland on 16-19 June 2013. The conference brought together around 500 innovation experts from 50 countries. The three-day program included: Keynote & Luminary Speakers; Innovation for Business sessions with speakers from leading companies; "Hot Topic" Roundtable Discussions; Facilitated Themed Sessions with Academic and Practitioner Presentations; Workshops; Special Interest Groups; and, Academic Research Development Sessions.

The ISPIM Symposium will be held in Melbourne, Australia from 8-11 December 2013.

Visit to EU countries: Exploring issues around high growth start-ups

In the week of 22 -29 June 2013, Justin Hill and Graydon Smith visited Norway, England, Scotland and Luxembourg to explore policy and program delivery issues around high growth start-ups and their financing.

They met with a number of government and government owned finance bodies (NESTA, Innovation Norway, European Investment Fund, Capital for Enterprise, Scottish Investment Bank, HM Treasury), angel investment organisations, and individual venture capital funds.

The pan-European early stage investment market remains poor with both capital raising and exits extremely difficult. Different governments use a variety of policy mechanisms try to attract investment to build their early stage ecosystems but they all look in envy at the United States and see many of their best start-ups move there. Most program delivery occurs through specialist government owned finance entities.

Connecting Australian-European Science and Innovation Excellence project

The Connecting Australian-European Science and Innovation Excellence project, aimed at enhancing science and technology collaborations between SMEs and researchers, launched its website in June 2013.

Stakeholders can register their interest to receive regular updates on the initiative, support with brokerage to establish early stage collaborative links, and information on Priming Grants for initial contact between researchers and SMEs that have identified a possible collaborative relationship.

Industry Innovation Precincts

As announced in the Industry and Innovation Statement: A Plan for Australian Jobs released on 17 February, the Government will invest over $500 million in the Industry Innovation Precincts initiative.

The Precincts will be industry-led, national networks that act as catalysts for new ideas, services and methods, generating a pool of knowledge that increases innovation and productivity by building critical mass around our areas of competitive advantage and emerging opportunities.

The initiative puts industry leaders in the driver's seat. Led and run by industry, Precincts are designed to be highly flexible and responsive, so that they can propel innovation, boost productivity, increase growth and create jobs.

While each Precinct may be headquartered in a specific location, it will focus nationally to provide the tools and services to enable Australian businesses to invest, innovate and grow.

Two Precincts have already been announced – Manufacturing and Food.

- The Manufacturing precinct (META) will be headquartered in the New Horizons building at the Clayton Campus of Monash University. It will also have a location in Adelaide with a focus on the defence industry.
- Food Innovation Australia (the Food Precinct) will be headquartered at La Trobe University's R&D Park on the Bundoora campus for an initial period of 12 months after which options for a more permanent location will be assessed.

The remaining Precincts are being selected via industry-led proposals against identified selection criteria. Applications for stage one of the selection process closed on 5 June 2013. The outcome of stage one of the selection process is expected in late July or early August with successful stage one applicants invited to progress to stage two. All Precincts will be operational in 2014.

Australian Jobs Act 2013

On 17 February 2013, as part of the Industry and Innovation Statement: A Plan for Australian Jobs, the Government announced that it will introduce a new law to help Australian businesses access opportunities to win more work on large domestic projects.

The Australian Jobs Act 2013 requires all major project developments with capital expenditure of $500 million or more to develop and implement an Australian Industry Participation (AIP) plan which will ensure that Australian businesses have full, fair and reasonable opportunity to bid for key goods and services.

The Act will also create the Australian Industry Participation Authority, a new independent statutory authority to oversee these changes and deliver a range of other initiatives aimed at building capability and capacity within local business and link them with new business opportunities.

The Act and new Authority will commence on 28 December 2013.

Manufacturing Leaders Group

The Manufacturing Leaders Group is a forum for providing strategic policy advice on manufacturing to the Minister for Climate Change, Industry and Innovation. It continues the strategic engagement and dialogue with industry established by the 2012 Prime Minister's Manufacturing Taskforce.

Announced in 2012, it is advising on the implementation of the Government's 2013 *Industry and Innovation Statement: A Plan for Australian Jobs*.

Dr Ian Thomas, President of Boeing Australia and South Pacific, chairs the Group, and Dave Oliver, ACTU Secretary, as Deputy Chair. Membership is drawn from business, unions and the research sector. Sixteen of the Group's 22 members were closely associated with the Manufacturing Taskforce.

The Group's advice will help the sector manage change, boost productivity and competitiveness, seize opportunities and create more high skill manufacturing jobs by promoting innovation and engagement with domestic and international markets. It will support entrepreneurship and encourage Australian businesses to think globally as they respond to challenges and opportunities, including those emerging from the Asian Century.

The Group has identified seven priorities to advance the implementation of the Industry and Innovation Statement:

- Improving public perceptions of Australian manufacturing to attract and retain skilled workers and investment to supply high-value products and services globally;

- Increasing the adoption of a high performance workplace culture by more Australian manufacturing SMEs to help them innovate, grow and compete globally;
- Promoting and enhancing linkages between multinational corporations and high performing Australian manufacturing SMEs to help them grow into global scale firms;
- Building a culture of innovation and collaboration through Industry Innovation Precincts;
- Encouraging the adoption of design-led innovation by more Australian manufacturing SMEs to help them innovate, grow and compete globally;
- Examining the need for additional measures for addressing short term adjustment pressures and lifting demand for Australian made goods;
- Leadership dialogues in specific sectors facing critical pressures and structural change.

Australia moving to a floating price on carbon pollution

On 16 July, the Australian Government announced its commitment to the move to emissions trading from 1 July 2014. The change will ease cost-of-living pressure on families while ensuring Australia continues to play its part in reducing carbon pollution for the good of the environment. Bringing forward the start date of a floating price on carbon emissions to 1 July 2014 will cost the budget around $3.8 billion over the next four years.

Education seminars ‘Operating your business in a low carbon economy’

The Australian Government has partnered with Westpac's Davidson Institute to deliver 30 free carbon education seminars - Operating your business in a low carbon economy - to small businesses and not-for-profit organisations around the country.

Small business and not-for-profit organisations are not required to pay a carbon price. Nevertheless, there are still many opportunities for small businesses and other organisations to support the Australian economy making the transition to a clean energy future.

The free seminars will cover a range of topics that will help business owners understand what a low carbon economy is, plan for change and identify ways to become sustainable using sound financial management tools.

The seminars will also help attendees to understand where they can access resources and information on grants and energy efficiency.

The seminars commenced on 29 May in Port Macquarie and ran nationally until 19 July 2013.

Australia's future electricity grid gets a makeover

A new $13 million, 3 year research collaboration was launched in May between CSIRO and four leading Australian universities – The University of Sydney, The University of Newcastle, The University of Queensland and The University of New South Wales - to guide the future of Australia's electricity sector.

By 2050, CSIRO predicts that our homes and businesses could be powered by more than 20 different energy sources and technologies. Working towards this future, the The Future Grid Cluster, will help Australia's electricity sector prepare for the huge makeover required to undergo such a transformation.

The Cluster will bring together engineering, economic and policy aspects of grid development to address four major areas:

- Improved understanding of impacts of different loads, generation sources and energy storage on system security; led by The University of Sydney;
- Planning and co-optimisation of electricity and gas networks; led by The University of Newcastle;
- Economics of alternative network development paths and estimates of total cost and price impacts; led by The University of Queensland;
- Policy measures and regulatory changes to facilitate a smooth transition to a de-carbonised future grid; led by the University of New South Wales.

The Future Grid Cluster is supported by $10 million worth of in-kind contribution from university partners and a $3.2 million grant from the CSIRO Flagship Collaboration Fund.

Business innovation hits record high

The latest data from the Australian Bureau of Statistics (ABS) shows that 47% of all Australian businesses actively undertook innovation activities (defined as the introduction of any type of innovation, any innovation that is still in progress, or an abandoned innovation over the period) in 2011-12, the highest level recorded for Australia. This is an increase from 39% in 2010-11.

The ABS report 'Summary of IT Use and Innovation in Australian Businesses 2011-12' (ABS Cat. No. 8166.0) includes indicators on the use of information technology and innovation in Australian businesses. A record 56% of manufacturing firms were involved in innovation activities in 2011-12, compared with 45% in the previous year. Innovation activities include the introduction of any type of innovation; any innovation that is still in progress or an abandoned innovation.

In 2011-12, there were increases across all types of innovations: goods and services, operational process, organisational or managerial processes and marketing methods. The proportion of businesses that reported introducing at least one type of innovation increased from 33% in 2010-11 to 41% of businesses in 2011-12.

The industries of Arts and Recreation, Rental, Hiring and Real Estate Services and Information, Media and Telecommunication reported the highest increase in the proportion of innovating businesses.

By firm size, the proportion of innovating businesses was the highest for large businesses (200 or more employees) at 69%. The proportion of innovating micro businesses (0-4 employees) increased to 33% from 25%, small businesses (5-19 employees) increased to 51% from 44% and medium-sized businesses (20-199 employees) increased to 64% from 56%.

Businesses also reported an increase in internet access; the use of broadband as the main type of connection; a web presence; and placing orders via the internet in 2011-12. Over half of Australian businesses (55%) reported placing orders via the internet, a 4% increase from 2010-11.

Over half of the businesses in the Information, Media and Telecommunication and Wholesale trade industries reported receiving orders online (55% and 52% respectively). The proportion of businesses in Retail Trade industry that received orders via online was 36%.

The value of the orders received via the internet increased to A$237 billion in 2011-12 up from A$189 billion in 2010-11, an increase of 25%.

Regulatory Review on Employee Share Schemes

On 12 June 2013, the Australian Government has announced that it will review the taxation and administrative arrangements around employee share schemes as part of the Advancing Australia as a Digital Economy: Update to the National Digital Economy Strategy. As part of this process, the Government announced that it will review the taxation and administrative arrangements around employee share schemes.

The Government will consult with stakeholders to identify measures to address the barriers faced by start-up companies, including:

- developing guidance to reduce the administrative burden (meaning the cost of valuing shares and options) of establishing an ESS;
- adjusting the valuation methodology of options; and
- examining the point at which share options are taxed for start-up companies.

The Review is being conducted by The Treasury and the Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education, and report back to Government by December 2013.

A discussion paper was released in July. To receive a copy of the discussion paper and to participate in the consultations, please send your contact details to ess@treasury.gov.au or ventureaustralia@innovation.gov.au.

Consultation on crowd sourced equity funding

The Australian Government announced on 12 June 2013 that it will consult with stakeholders on whether Australia's corporations law appropriately

facilitates and properly regulates crowd-sourced equity funding (CSEF). This was announced as part of the Advancing Australia as a Digital Economy: An Update on the National Digital Economy Strategy.

Crowd sourced equity funding is a new and evolving mechanism for companies to raise capital, particularly early stage or 'seed' capital. It operates by 'crowdsourcing' investors by asking businesses to offer debt or equity interests in the investee business using online crowd-funding platforms.

The review will consider whether international models can provide guidance, and what would constitute a best practice framework for regulation in the event that legislative change is appropriate. The Review is being undertaken by the Corporations and Markets Advisory Committee, an independent committee within the Treasury, and will report back to Government by April 2014.

http://www.nbn.gov.au/files/advancing_australia/Chapter8.html

Commercialisation Australia

The latest issue of Value Proposition magazine (the free quarterly magazine from Commercialisation Australia) was released on 1 July 2013. The name of the magazine encapsulates Commercialisation Australia's mission, to see more of Australian inventions and R&D achieve commercial expression. This issue has a theme of The Regions, and some highlights are:

Portfolio snapshot

A state-by-state overview of Commercialisation Australia's achievements.

Innovation in the regions

Innovators in regional Australia face a host of challenges seldom experienced by city-based start-ups. They have found unique ways to address/alleviate those challenges.

Distilling the merits of regional operations

Green Distillation, which can transform used tyres into oil, carbon and steel, plans to market an IPO next year to fund seven additional sites. Meanwhile, it is getting closer to raising $7.5 million to transform its Warren NSW pilot plant into its first commercial plant.

Securing the cloud

Hobart-based *Asdeq Labs* has developed a world first enterprise solution that delivers corporate documents securely on mobile devices, anywhere, anytime via military-grade encryption standards. Now it is winning government and corporate clients Australia wide and in North America.

Is it tough trading in the regions? You bet your little cotton socks

As *Innovate AG* works to take on even the largest of multinational chemical corporations with its product Sero-X - an organic plant based insecticide for the agricultural industry - it is finding that working in the regions provides challenges.

Random Numbers

QuintessenceLabs Pty Ltd has transfigured frontier-of-science quantum key distribution research conducted at the Australian National University into globally competitive cyber security technologies offering major benefits to the national security, banking and insurance, health and critical infrastructure markets.

Previous issues can be accessed at:
http://www.commercialisationaustralia.gov.au/valueproposition/Pages/default.aspx

Download Free Apps

Free iPhone and iPad Apps can be downloaded by searching "InnovationGov" at the iTunes Store.

CTRL+P: printing Australia's largest solar cells

Thanks to a new solar cell printer, CSIRO scientists have produced the largest flexible, plastic solar cells in Australia. These cells are 10 times the size of what was previously possible.

The printer has allowed researchers from the Victorian Organic Solar Cell Consortium– a collaboration between CSIRO, The University of Melbourne, Monash University and industry partners – to print organic photovoltaic cells the size of an A3 sheet of paper.

One of the great advantages of the group's approach is that they're using existing printing techniques, making it a very accessible technology. Using semiconducting inks, the researchers print the cells straight onto paper-thin flexible plastic or steel. With the ability to print at speeds of up to ten metres per minute, this means they can produce one cell every two seconds.

As the group continues to scale-up their equipment, the possibilities will become even greater. Eventually they expect to see the cells being laminated to windows that line skyscrapers. By printing directly to materials like steel, they'll also be able to embed cells onto roofing materials.

As part of the consortium, a complementary screen printing line is also being installed at nearby Monash University. Combined, the two printers will make the Clayton Manufacturing and Materials Precinct one of the largest organic solar cell printing facilities in the world.

Advancing Australia as a Digital Economy

The Australian Government's National Digital Economy Strategy launched in 2011, sets out a vision for Australia to become one of the World's leading digital economies by 2020 by realising the full potential of the National Broadband Network.

The Strategy outlined eight goals to increase Australia's broadband connectivity and overall use of digital technologies. Advancing Australia as a Digital Economy, launched 12 June 2013, is an update on the 2011 Strategy,

outlining progress made towards these goals, and laying out the next steps that need to be taken.

The update announces several new Australian Government initiatives including Digital First, a commitment that priority Government transactions will be end-to-end digital by 2017. The Australian Government will also expand the use of digital mail by myGov and conduct proof of concept trials for other digital mailboxes, with the aim of demonstrating how digital mailboxes can more securely connect Australians with government services. In order to enhance household and business understanding of and engagement in the digital economy, the Digital Enterprise and Digital Local Government programs will be extended and Digital Business Kits containing online skills tutorials will be developed for distribution.

Recognising the importance of encouraging innovative ICT companies, the Australian Government will enhance the regulatory environment for innovative ICT start-ups by looking at possible changes to improve employee share scheme arrangements by the end of 2013 and conducting a review of regulations governing crowd-sourced equity funding.

National Cloud Computing Strategy

The National Cloud Computing Strategy, released 29 May 2013, outlines the Australian Government's vision for the future of cloud computing in Australia. The strategy aims to promote the benefits of cloud services for individuals, businesses and government agencies and reduce barriers to adoption.

Cloud computing allows data and software to be stored on the internet rather than on local servers. Whilst traditionally organisations have utilised ICT as a product in the form of on-site hardware and software, cloud computing is allowing users to access ICT as a service provided over the internet. There are several advantages to businesses and individuals in utilising cloud services including reduced ICT resources costs, greater accessibility of data and software, and the ability to access computer services on a pay-as-you go basis.

The strategy outlines three core goals designed to utilise cloud computing to increase productivity:

1. Maximise the value of cloud computing in government;
2. Promote cloud computing to small businesses, not-for-profits and consumers; and
3. Support a vibrant cloud services sector.

Key initiatives announced in the Strategy include, the Department of Finance and Deregulation enhancing procurement practices to ensure that government agencies are required to consider public cloud services for new ICT procurements, increase the online information available to small business and not-for-profit organisations about the use of cloud services, and Austrade will work in partnership with industry to promote Australia as a trusted hub for data storage and processing, and will encourage foreign investment and participation.

Strategic Research Priorities released

On 21 June 2013, the Australian Government released the Strategic Research Priorities. They were developed by the Australian Research Committee (or ARCom) as part of the implementation of the actions in the National Research Investment Plan, which was released November 2012.

The Priorities are to drive investment in areas that are of immediate and critical importance to Australia and its place in the world, by fostering a more coordinated and strategic approach within the identified research areas. There are five critical societal challenges which the Priorities are aimed at addressing:

1. Living in a changing environment;
2. Promoting population health and wellbeing;
3. Managing our food and water assets;
4. Securing Australia's place in a changing world;
5. Lifting productivity and economic growth.

The Priorities will assist the Australian Government to ensure that there is sufficient scale of effort to achieve a strong impact in the 5 critical areas. The Priorities will now be implemented across all government departments and agencies engaged in the funding of research.

Assessing research benefits to Australia

On 19 June 2013, the Australian Government released a call for submissions on how best to measure and explain the benefits of government-funded research in universities.

The *Assessing the wider benefits arising from university-based research* discussion paper will look at ways to identify how research is benefiting the broader community. This will help the research sector explain to all Australians the value of its work, and better align it with national challenges and priorities.

The approaches suggested in the paper build on the outcomes of the Excellence in Innovation for Australia trial undertaken by universities during 2012.

Consistent with the recently established independent review of red tape, the paper will focus on maintaining higher education quality and transparency, without increasing the regulatory burden. Universities, business and industry will be widely consulted before any decision on the final form of the new assessment. Following consultations, a pilot exercise is planned for early 2014.

For further information on research impact and to access the discussion paper, visit the website.

Submissions close on 16 August 2013.

Strengthening the patent system to safeguard access to new technologies

The Australian Government is moving to strengthen intellectual property safeguards and improve oversight of the patent system. On 30 May 2013, the *Intellectual Property Laws* Amendment Bill 2013 was introduced into Parliament, to clarify the operation of Crown use provisions in the Patents Act 1990.

The announcement follows the release of the Productivity Commission's Report on Compulsory Licensing of Patents which found there was uncertainty around the scope of current Crown use provisions, particularly in the context of healthcare. The Bill will clarify that Crown use can be invoked in relation to any service that governments have the primary responsibility for funding or providing.

Some categories of patents, such as gene patents, raise complex legal and ethical questions. The validity of these patents is currently being considered in court cases in both Australia and the United States. These changes make it clear that, if necessary, the Australian Government has the power to address unreasonable conduct by patent holders and protect patients' access to healthcare services.

The Bill will improve transparency and accountability of Crown use, including a requirement to negotiate and providing a basis to determine remuneration for patent holders. The amendments will give governments and business greater certainty about the operation of Crown use.

While commercial negotiation with patent holders will continue as usual, Crown use will be a safeguard to address exceptional circumstances. The Government will also undertake a number of measures to further clarify the patent system and strengthen mechanisms for oversight including:

- appoint a Patent Audit Committee to advise on patent policy settings and undertake audits of patent approvals for certain technology groups;
- commence consultations on a new objects clause for the Patents Act; and
- consult on excluding certain inventions that would be offensive to the public.

The patent system is expected to strike the right balance between encouraging innovation and providing equitable access to new technologies.

NSW Creative Industries Taskforce final report

The final report of the NSW Creative Industries Taskforce as well as the Government's response at the Museum of Contemporary Art was released on Thursday 6 June 2013.

The industry-led taskforce was launched by the NSW Government in June 2012 to develop a comprehensive strategy for driving growth, innovation and productivity across the NSW creative industries. Recommendations released by the taskforce have a critical role to play in the economic and social future of the State.

FutureGov Forum NSW

The second annual FutureGov Forum NSW held on 24 June 2013 in Sydney examined New South Wales government's future IT procurement plans, initiatives and changes that are expected for the NSW public sector in 2013.

The NSW Government ICT Strategy is guiding the direction for information and communications technology in NSW. Key issues that the government is tackling include: cloud services, open government, information management, data centres and procurement reform.

Hot topics for discussion included:

- **Deliver better services**: How the government will deliver services in much improved and integrated manner;
- **Open government**: How to make government information accessible to citizen and be a transparent government;
- **Big Data**: How big data will provide agencies with the needed analytics and business intelligence to deliver focused services and improve customer experience;
- **IT Investment & Innovation**: How IT investment in innovative technologies will improve service quality, availability and reliability of services provided to NSW citizens;
- **Procurement and shared services reforms**: How agencies are benefiting from shared services and the opportunities in working together;
- **Government private cloud**: What the new challenges and the security implications are for agencies in migrating to government private cloud.

Events such as FutureGov are providing the platform for an ongoing government-community dialogue.

New South Wales targets cloud suppliers for data centres

New South Wales is integrating data centre and cloud services, with plans being finalised by the Department of Finance and Services offering a centralised hub of ICT services for agencies.

Shortlisted companies, including cloud solutions providers, will be encouraged to offer hosted services within two data centres, due for official launch in Silverwater (Sydney) in July and Unanderra (Wollongong) in August. A market-led private cloud is being offered, within the secure environment inside these centres.

More than 170 information technology service providers have so far downloaded the NSW government's expression of interest for cloud services.

Earlier, the New South government's ICT Strategy NSW ICT Strategy noted that cloud technologies will help reduce cost by leveraging small portions of a larger infrastructure base on an 'on demand' basis.

Queensland: A new IP website lanched

A new website is making intellectual property (IP) easier to understand for small to medium enterprises (SMEs). Director-General for the Department of Science, Information Technology, Innovation and the Arts Andrew Garner launched the Queensland Business IP website on 19 June 2013.

The Queensland Business IP website was jointly developed with the Australian Institute for Commercialisation, a division of QMI Solutions, and provides readily accessible information to any Queensland business that has owned, developed or used intellectual property.

South Australia - Funding for advanced manufacturing priority

The South Australian Government's Advanced Manufacturing priority has been supported in the 2013-14 State Budget with a package of measures to assist in the transition to an advanced manufacturing future. The Budget will provide:

- $4.1million over four years to establish a High-Value Food Manufacturing Centre, which delivers on Advanced Manufacturing Council chairman Professor Göran Roos' recommendation to establish industry clusters based on South Australia's key strengths including premium food and wine. The centre will bring together the food manufacturing industry, government, universities and researchers to accelerate the application of new knowledge and innovation in food manufacturing. It will assist the development of improved food and processing technologies and provide technical expertise in new product development;
- $3 million over three years to continue the Small Business Innovation Research Pilot Program, which helps small businesses develop innovative products. The second phase of the Pilot Program also will aim to assist the South Australia's manufacturers to develop the capacity to consistently make high-value products and services;
- $150,000 over two years to place South Australian students within manufacturing businesses as part of a training program to be managed by the Australian Industry Group;
- An extra $27 million for training over two years to help South Australian industries meet their critical skills needs through the Skills for All program.

Screen Tasmania Digital Innovation Fund

Screen Tasmania's strategy is to position Tasmania as a centre for the creation of quality screen content using innovative methods of production and delivery. This strategy utilises Tasmania's first-mover advantage under the NBN roll-out.

As part of this strategy, Screen Tasmania developed the Digital Innovation Fund in recognition of the need to strategically drive growth in narrative-based content for digital platforms. It offers up to $25 000 per project and was launched in late 2011. Since then, a number of projects have been funded

either for development or production including comedy webisodes, a serious game, a cross-platform live/digital video/webcast event, an interactive drama, an app and an interactive graphic novel.

Victorian Government procurement

The Victorian Government have streamlined ICT procurement processes in the state through the launch of its e-Services Register, which will stimulate innovation. The new eServices Register would replace the eServices Panel to enhance greater market competition and increase innovation and productivity through more efficient processes.

The Victorian Government will have better access to the small to medium sized Victorian based ICT companies and maximise their opportunities to win government ICT contracts.

The eServices Register will operate as a market place, providing Victorian ICT companies with greater access to Victorian Government ICT projects, and global exposure. Suppliers will also be able to identify possible partners, particularly small and medium companies who may not be able to respond to a request individually.

International Developments

Global

Global Innovation Index 2013

The 2013 edition of the Global Innovation Index was released on 1 July. The Index recognizes the key role of innovation as a driver of economic growth and prosperity, with the inclusion of indicators that go beyond the traditional measures of innovation (such as the level of research and development in a given country).

The Index relies on two sub-indices: the Innovation Input Sub-Index and the Innovation Output Sub-Index, each built around five input pillars that capture innovative enabling elements of the national economy:

1. Institutions;
2. Human capital and research;
3. Infrastructure;
4. Market sophistication; and
5. Business sophistication.

Two output pillars capture actual evidence of innovation outputs:

- Knowledge and technology outputs; and
- Creative outputs.

Australia ranked 19 out of 142 countries in 2013 (up from 21st in 2012) with its strengths including: ease of starting a business; employment in knowledge-intensive services; and intensity of local business competition.

Australia's weaknesses included: Communications, computer and information services exports (as a percentage of total services exports); High-tech net exports (as a percentage of total net exports); R&D financed by abroad; and Graduates in Science & Engineering.

The 2013 Index top 10 ranked countries/economies were: Switzerland, Sweden, UK, Netherlands, USA, Finland, Hong Kong (China), Singapore, Denmark, and Ireland.

Asia-Pacific

Building science links with China

CSIRO, through its Water for a Healthy Country Flagship, has joined forces with the University of Melbourne to secure the Australia-China Research Centre on River Basin Management, which was launched in Beijing on Thursday 30 May.

This Centre gives both countries new capacities to address national priorities for water resources management and build technical capacity in water

catchment management, water productivity, and environmental and rural community sustainability.

Importantly, the Centre will allow Australian and Chinese researchers to:

- develop and transfer solutions for water catchment management, creating improved economic gains while protecting water ecosystems;
- build on and exchange findings from river basin research in both countries;
- showcase robust technologies for improving water use efficiency and water quality;
- forge enduring partnerships between science, innovation and industry.

The Centre was one of six recently announced Joint Research Centres co-funded by both the Australian and Chinese governments as part of the Australia-China Science and Research Fund.

The Centre will be led by the University of Melbourne and will draw on expertise from across Australia, including the Murray-Darling Basin Authority and the University of Technology Sydney.

In China, the Centre will be supported by ten partners including the Chinese Academy of Sciences, the Ministry of Water Resources and Tsinghua University.

China launches its first carbon trading scheme

China has launched its first carbon trading scheme as it tries to reduce pollution from greenhouse gases. A platform allowing businesses in the southern city of Shenzhen to trade permits to emit carbon was established on 16 June 2013, and trading began on 18 June.

Under the scheme, companies will be assigned an emissions quota and will be able to profit from selling excess permits to other firms if they emit below their quota.

China plans to open similar schemes in seven areas including the capital Beijing, the major commercial centre of Shanghai, the port city of Tianjin and Guangdong province before 2014, in what analysts say is a step towards a nationwide carbon market.

The pilot programs will cover areas in which tens of millions of people live and cover far more emissions than the entire carbon market in Australia.

Pakistan: National science and technology conference

A two-day national conference on 'Technology Foresight and Critical Issues Related to Science & Technology in Pakistan" was organised by Pakistan Council for Science and Technology (PCST), on June 25 and 26 June. In the conference a keynote presentation on the 'Salient Features of Science, Technology & Innovation Policy - 2012', discussed the holistic approach adopted in the preparation of the Science, Technology & Innovation Policy - 2012, which was released in October 2012. The policy contains a

recommended set of actions to be effective for planning the policy's implementation.

It was emphasised the role of the Ministry of Science and Technology to synergise actions by different ministries and departments, coordinate science and technology policy actions with other sectoral policy targets, and steer the general progress of policy implementation. The policy specifically mentions four areas of priority: nanotechnology; biotechnology; renewable energy; and satellite technology.

The Council is also undertaking a project titled “Technology Foresight Exercise in Pakistan”. Through this exercise, PCST has completed foresight in areas including; Education, ICT, Environment, Health, Energy, Industry and Agriculture. The Technology Foresight exercise in Bio-technology and Water area is under process. In near future, PCST plans to conduct the exercise in Nanotechnology and Electronics. The exercise was carried out through using expert panel techniques in which top level national experts pertaining to a particular science and & technology disciplines are involved.

NZ: Google Launches Project Loon

Google has launched a plan to use a network of giant balloons travelling on the edge of space to provide internet to the two-thirds of the world currently without access. The plan, dubbed Project Loon, is designed to connect people in rural and remote areas, help fill gaps in coverage, and bring people back online in the aftermath of disasters.

The balloons are moved around the Earth by wind and can be steered by raising or lowering them to an altitude with winds blowing in the desired direction. People connect to the balloon network using a special internet antenna attached to their building.

Project Loon was first trialled in New Zealand on 15 June 2013. Wi-fi signals were beamed from another part of New Zealand to the balloons, and then to the homes of about 50 trial participants. Google says the trial was a success and participants were able to connect to the internet.

Singapore’s OneMap Journey

As part of its ongoing efforts to leverage geospatial information and technology, the Singapore Land Authority (SLA) launched, in 2010, its OneMap initiative for the entire government to share geospatial data with the general public. The initiative stemmed from the need to have a common map platform where agencies can share non-sensitive geospatial information with the public, and provide basic map services such as search and routing.

SLA aims to achieve the following objectives: provide a common base map for government agencies to present geospatial information and deliver geospatial services; inculcate the concept of location-based information and services; and showcase the innovative use of geospatial information and technology. Innovativeness is in the core of OneMap - discovering more uses for geospatial data, and continuously rolling out creative services. Another essential ingredient to the success of the OneMap was collaboration and partnerships.

Due to difficulties in persuading other government agencies to use the OneMap portal and encouraging them to share their data and information to the public, SLA focused on forming partnerships from different domains to proliferate the use of geospatial information and technology through OneMap. SLA led the initiative with seven agencies from the Culture, Recreation and Sport sector, and ran roadshows to various agencies to illustrate examples of how geospatial information was useful and demonstrate how they could better serve the public.

When it was launched in March 2010, the portal had 16 contributing agencies and 20 themes and five services. Today there are about 34 contributing agencies, 64 themes and 37 services.

Vietnam state telco to deploy cloud computing

Vietnam Mobile Telecom Services Company, (VMS) a state owned telco under Vietnam Posts and Telecommunications, will deploy mobile computing platform to expand into new markets, enhancing its capabilities, and improving productivity.

A collaborative agreement was signed between the VMS and IBM in May 2013 to adopt an end-to-end mobile solution via cloud computing, especially for VMS MobiFone subscribers. MobiFone is the VMS commercial brand for mobile phone services. The new platform will allow the VMS to launch new value-added services such as advertising and promotional campaign, building an effective cloud ecosystem, and providing Mobile Platform as a Service, Infrastructure as a Service, and Software as a Service to its partners and enterprise customers. VMS is the first organisation in Vietnam to deploy an end-to-end mobile on cloud.

This collaborative agreement is within the framework of the VMS's five-year IT development strategy aimed at becoming the strongest and most trusted counterpart of concerned parties in the IT field in Vietnam, and other countries.

Apart from implementing hardware and backup infrastructure, the VMS will migrate its computing platform to the cloud, transforming its business processes. As a result of this project, the VMS will be able to foster mobile environment within the organisation as well as for management and internal activities.

Science and Technology Agreement signed with Vietnam

On 26 June 2013, Australia and Vietnam signed an Agreement on Scientific and Technological Cooperation, for the two countries to continue to work together on scientific and technological projects.

The signing of the Agreement built on the 1992 bilateral Memorandum of Understanding on Science and Technology, further cementing the friendship between the two countries. The CSIRO has a long history of cooperation with Vietnam in agriculture, land management and water resources research, while the Australian Research Council is funding 17 new and ongoing collaborative research projects.

Areas of shared interest for the two countries include understanding the impacts of climate change, identifying and implementing adaptation measures, and supporting low-carbon growth. This Agreement supports further development of the science and technology relationship between the two nations and enables the continuation of collaborative research projects. This is expected to further help Australian exporters to grow their businesses in the region.

Europe

UK: Centre for Social Action Innovation Fund

The Centre for Social Action Innovation Fund opened for applications in April 2013. The £14 million Fund is the first initiative from the Centre for Social Action, which has been established by the Cabinet Office to support programs that encourage people to create positive change through social action.

Administered by Nesta, the UK's innovation foundation, it will focus on a number of big social challenges in instances where there is a realistic possibility that social action can make a difference, and is under-exploited by the existing public service approaches.

Charities, social enterprises, public services and for-profit businesses can apply for grants of between £50,000 and £500,000 to support projects that deliver public benefit. In most cases matching funding will be required.

The first round runs until 31 October 2013, and will support innovative projects that use social action to achieve impact in the following areas:

- Ageing well: Helping people to age well, particularly by supporting people over 50 years to have a purpose, a sense of well-being and to be connected to others;
- Long-term health: Enabling people with long-term health conditions to have a better quality of life, particularly through the use of peer to peer networks and groups;
- Young people: Supporting and encouraging young people to succeed and find employment, for example through mentoring, coaching, and peer-to-peer networks;
- Impact volunteering: Using new approaches to 'impact volunteering' to mobilise volunteers to increase and enhance the outcomes achieved by public services.

UK: Manifesto for the Creative economy

On 24 April 2013, Nesta released its ten-point manifesto for the creative economy.

The manifesto identifies what policymakers, educators, businesses and regulators need to do (in the face of digital disruption) to to improve the innovation and growth prospects of the UK's creative economy.

According to recent estimates, the creative economy employs 2.5 million people in the UK (greater than financial services, advanced manufacturing and construction) and accounts for at least 9.7% of the UK's Gross Value Added.

The ten recommendations identified by Nesta cover a range of themes, some of which are the responsibility of the UK Government, and others which are the responsibility of the devolved administrations in Scotland, Wales and Northern Ireland.

The top priorities in Nesta's manifesto are to:

- Ensure that the next generation of the Internet is truly open. This calls for contestable creative economy markets, well supervised by competition authorities which have the information and authority to act speedily and effectively when there are concerns about market abuse;
- Ensure that all teenagers have the opportunity to learn creative digital skills, such as designing apps and games, as part of a fusion in the curriculum covering technology and art, as well as maths, science and the humanities;
- Ensure that policy tools designed to incentivise innovation, from tax relief to procurement rules, should be adapted to the needs of the creative economy;
- Ensure that the UK's publicly funded creative powerhouses, from the BBC to universities, arts organisations and museums, have the capability and capacity to take advantage of the next generation of digital technologies.

Nesta argues that if its recommendations are adopted by Government, the UK will be able to better exploit the opportunities afforded by the digital age thereby creating more high-quality jobs and making greater contributions to the economy.

UK: Information Economy Strategy

The UK's Information Economy Strategy was launched on 14 June 2013, as a strategy for a thriving UK information economy and enhanced national competitiveness, with:

- A strong, innovative, information economy sector exporting UK excellence to the world;
- UK businesses and organisations, especially small and medium enterprises, confidently using technology, able to trade online, seizing technological opportunities and increasing revenues in domestic and international markets;
- Citizens with the capability and confidence to make the most of the digital age and benefiting from excellent digital services.

Long term success will be underpinned by:

- A highly skilled digital workforce (whether specialists who create and develop information technologies, or non-specialists who use them);

- The digital infrastructure (both physical and regulatory) and the framework for cyber security and privacy necessary to support growth, innovation and excellence.

North America

Review of Canadian Science and Technology

On 21 May 2013, the Canadian Government received the Science, Technology and Innovation Council's (STIC) third State of the Nation report: Canada's Science, Technology and Innovation System: Aspiring to Global Leadership. The biennial report charts Canada's Science, Technology and Innovation (STI) performance on key indicators over the past two years against global competitors, and finds much to praise in terms of the high quality of the nation's talent and strength in generating knowledge. But the STIC believes Canada lags in private sector investment in innovation and the transfer of new knowledge to the market, as well as using the country's STI talent to its full advantage in the work force.

The key STI indicators areas deemed strategic areas for improvement are:

- Business Expenditure om R&D (BERD) as a share of GDP;
- Business investment in Information and Communications Technologies (ICT);
- Higher Education Expenditures on R&D (HERD) as a share of GDP;
- Science & Engineering doctoral degrees granted per 100,000 population.

For each of these areas, the world's top five performing countries have been identified, and the threshold that Canada would have to attain to break into their ranks. It has been acknowledged that Canadian business investment in r&d has continuously declined over the past decade, and that increased business r&d investment is essential to Canada's future as a nation of innovators.

Created in 2007 as a key component of the Canadian government's Science and Technology strategy, the STIC has 18 members from Canada's business, research, education and government sectors, and its mandate is to provide ministers with evidence-based advice on STI policy issues.

US: Printing Tiny Batteries

Researchers from Harvard's School of Engineering and Applied Science and University of Illinois at Urbana-Champaign have successfully 3D-printed lithium-ion microbatteries the size of a grain of sand. To make the microbatteries, the research team printed precisely interlaced stacks of tiny battery electrodes, each less than the width of a human hair.

This development will have a huge impact on the development of tiny devices in the fields such as robotics, medicine and communications as many of these devices have been developed but have not been progressed forward due to the lack of a battery small enough to fit into the device and provide enough stored energy to power them.

US: CrowdIt launches new crowdfunding model

CrowdIt, a new crowdfunding website with a novel model, launched on 4 June 2013. The company brings networking, mentorship and support services to the traditional crowdfuding model in order to increase the likelihood of success after the initial campaign for funds has ended. CrowdIt is based on the idea that current platforms such as Kickstarter and Indiegogo are limited by focussing on a single project for funding, rather than creating a sustainable business model. CrowdIt is designed to create a community of ‘dreamers’ (entrepreneurs), ‘believers’ (investors) and ‘suits’ (business experts) which encourages startups to develop industry networks and seek advice and expertise.

US: President Obama announces new Climate Action Plan

On 25 June 2013, President Obama announced a new Climate Action Plan to reduce carbon pollution. It includes directions to the US Environmental Protection Agency to complete carbon pollution standards for both new and existing power plants. President Obama has also announced a goal of reducing carbon pollution by at least 3 billion tonnes by 2030.

Like Australia's Clean Energy Future plan, the Climate Action Plan includes measures to support renewables, energy efficiency and long-term investment in clean energy innovation. The Climate Action Plan states that America, as the world's second largest emitter, will take a leadership role in forging a global climate change solution. It follows another significant international development just a few days before, when China, the world's largest emitter, launched its first emissions trading scheme for the city of Shenzen.