



Australian Government
Department of Industry

Innovation Policy Report

October 2014

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Strategic policy initiatives

National

Australian Government launches Industry Innovation and Competitiveness Agenda

On 14 October 2014, the Prime Minister and the Minister for Industry [launched](#) the [Industry Innovation and Competitiveness Agenda](#), which 'is a central part of the Government's Economic Action Strategy to build a strong, prosperous economy for a safe, secure Australia.'

The Agenda focuses on providing the right economic incentives to enable businesses to grow. It contains immediate reforms which aim at boosting competitiveness and a range of proposals for public consultation. The Agenda sets out four ambitions that Australia must pursue to ensure job creation and higher living standards:

1. A lower cost, business friendly environment with less regulation, lower taxes and more competitive markets;
2. A more skilled labour force;
3. Better economic infrastructure; and
4. Industry policy that fosters innovation and entrepreneurship.

Six initiatives to boost our Australian competitiveness will be implemented over the next 18 months:

5. Encouraging employee share ownership;
6. Reforming the vocational education and training sector;
7. Promoting science, technology, engineering and mathematics skills in schools;
8. Accepting international standards and risk assessments for certain product approvals;
9. Enhancing the 457 and investor visa programmes; and
10. Establishing Industry Growth Centres.

The competitiveness challenge is an ongoing one, and further reforms to promote the Agenda's ambitions will be developed over the longer term. The Government will host a series of roundtables around Australia over coming months to consult the business community, industry associations and peak bodies, as well as academia, on the policy directions outlined in the Competitiveness Agenda.

The Cooperative Research Centres Programme to be reviewed on its 25th anniversary

On 16 September 2014, Minister for Industry the Honorable Ian Macfarlane MP [announced](#) the appointment of a prominent lawyer and innovation expert David Miles AM to lead the review of the Australian Government's Cooperative Research Centres (CRC) Programme.

“This year is the 25th anniversary of the CRC programme and an important time to review the programme and its role in supporting business and researchers to work together in industry-led partnerships,” Mr Macfarlane said.

The CRC programme began in 1991 under the Hawke Government. Since then, a total of 209 CRCs have been funded by the Australian Government which has committed more than \$3.8 billion through the CRC programme. There are 36 CRCs currently in progress ranging from Cell Therapy to Space Environment Management.

“The CRC programme has facilitated research and development in a range of areas by bringing together researchers, industry and the community,” Mr Macfarlane said.

“As Australia moves to consolidate its strengths and facilitate more frequent and targeted research connections between business and science, now is the ideal time to assess the programme and ensure Australia is making effective investments in collaborative projects that will boost Australia’s productivity and international competitiveness.”

The review’s final report and recommendations are expected by early 2015.

The review’s terms of reference and information about how to make a submission can be found at www.business.gov.au/CRC-Review

Applications for the Manufacturing Transition Programme open

On 1 September 2014, the Minister for Industry [announced](#) the opening of applications for the \$50 million Manufacturing Transition Programme which will run for three years. The Minister said the programme was designed to help firms move away from low-tech commodity style production to advanced manufacturing where Australia’s specialised knowledge and skills give us an advantage and provide opportunities for future growth.

Bioproducts research institute firm example of close industry collaboration

On 16 September 2014, Minister Macfarlane [launched](#) the Bioresource Processing Research Institute of Australia at Victoria’s Monash University and opened the Australian Research Council Hub for BioProcessing Advanced Manufacturing. This three-year \$1.6 million hub provides, when combined with industry and university contributions, a \$3.5 million investment to convert bio-materials into chemicals and energy products like new composites and smart packaging.

Research Connections Programme launched

On 5 September 2014, the Minister for Industry [made an announcement](#) of Research Connections, another stream in the Government’s \$484.2 million Entrepreneurs’ Infrastructure Programme, which provides easy to access practical support to Australian businesses in a simplified and streamlined way. Mr Macfarlane said that

Research Connections is focused on helping small and medium businesses to collaborate with the research sector to develop new ideas with commercial potential.

Federal Government invests \$21.5 million in home-grown ingenuity

On 26 August 2014, Parliamentary Secretary for Industry Bob Baldwin [announced](#) \$21.5 million funding for 12 new solar research and development (R&D) projects at an event hosted by the Australian Renewable Energy Agency (or ARENA) at the University of New South Wales.

“The Australian Government’s \$21.5 million investment is being matched by strong domestic and international industry investment, with the projects’ total value equaling more than \$70 million,” Mr Baldwin said.

“These projects represent the very best of the best. They were selected from a highly competitive R&D round promoting excellence in solar research, and are set to advance renewable energy knowledge and expertise in Australia.

“The research is primarily focused on improving performance and reducing manufacturing costs and will help improve the cost of deploying renewable energy in Australia.”

“This investment will ensure we continue to grow this important export base as well as advancing the nation’s technological capability and reputation for delivering groundbreaking renewable energy solutions that will ensure a diverse energy future for Australia.”

Australia: Chief Scientist Releases Strategy

On 2 September 2014, Australia’s Chief Scientist Professor Ian Chubb launched his report [Science, Technology, Engineering and Mathematics: Australia’s Future](#), as a recommendation to government for a strategic approach to science and its related fields. The Chief Scientist was joined by The Minister for Industry The Hon Ian Macfarlane for the launch at Parliament House. The Minister [said](#) science and research were at the centre of Australia’s industry policy and that the report complemented the development of the National Industry Investment and Competitiveness Agenda.

The Chief Scientist makes a suite of recommendations across four fields of action:

- Building competitiveness
- Supporting high quality education and training
- Maximising research potential
- Strengthening international engagement

“Science is infrastructure and it is critical to our future. We must align our scientific effort to the national interest; focus on areas of particular importance or need; and do

it on a scale that will make a difference to Australia and a changing world,” Professor Chubb said.

Australia–China Post Combustion Capture Feasibility Study Project Launch

On 1 September 2014, the Australia–China Post Combustion Capture Feasibility Study Project was formally launched in Beijing. The Australian Government has committed \$11.5 million to the project which will work towards a commercial-scale carbon capture and storage (CCS) project in China.

The Department of Industry works closely with China’s National Energy Administration on a range of collaborative projects and activities to support the development of clean coal technologies. The department has selected a project manager to work with a number of Chinese entities to deliver this important project.

Additional \$5 million for Otway CO2 Storage Project

On 15 September 2014, the Victorian Government committed an additional \$5 million to the Cooperative Research Centre for Greenhouse Gas Technologies’ (CO2CRC) world leading Otway carbon dioxide (CO2) storage project in south-western Victoria.

The Otway Project is showing that CO2 storage is a safe credible long-term option for mitigating emissions. The Australian Government is also contributing \$18.5 million through a CRC grant and \$51.6 million through the Education Investment Fund (or EIF) for the CO2CRC to build research infrastructure to support the [CarbonNet Carbon Capture and Storage \(CCS\) Flagship](#) in Victoria and other CCS projects such as the Collie-South West Hub CCS Flagship project.

Independent panel review of renewable energy target

On 28 August 2014, the Government released the report from the independent panel on the review of the Renewable Energy Target (RET).

The report provides an assessment of the operation of the RET and its impact on electricity prices and energy markets, as well as its costs and benefits for the renewable energy sector, the manufacturing sector and Australian households.

The RET was required to be reviewed under legislation this year and as part of a two-yearly review. The Government committed to reviewing the RET to ensure it is working efficiently and effectively.

The report is the result of an extensive consultation process with the renewable energy sector and Australian industry, during which over 24,000 submissions were received, and meetings with more than 200 stakeholders held.

The Government will consider the findings of the independent panel's review in the context of the costs and benefits of the scheme, and the impact on electricity prices and markets and sovereign risk issues.

Renewable energy plays an important and ongoing part in Australia's energy mix. The Australian Government is supporting ongoing investment in renewable energy projects, including with a \$1 billion dollar investment in almost 200 projects across a range of renewable energy technologies.

The RET has underpinned investment in large and small scale renewable energy generation, particularly in wind, solar photovoltaic and hot water systems. There are currently 416 renewable energy power stations accredited under the large-scale RET and around 2 million household renewable energy systems installed under the small-scale scheme.

The Government is determined to ensure Australia's energy market is robust and reliable and that Australian households and businesses continue to have access to affordable power.

The report is available at: <http://retreview.dpmc.gov.au/>

Australia and Singapore collaborate on metallic 3D printing

CSIRO has signed a two-year, \$1 million collaboration agreement with the Singapore Institute for Manufacturing Technology to develop metal powders for 3D printing. In late August 2014, John Barnes, Research Program Director of the Manufacturing Flagship's High Performance Metals Technology Program, accompanied Australia's Minister for Trade and Investment, the Hon Andrew Robb AO MP, to Singapore as part of a high-level aerospace delegation. The delegation included senior executives from key Australian aerospace manufacturing organisations that are involved with the supply chains of major aerospace programmes, such as Lockheed Martin's Joint Strike Fighter program.

\$20 million for research-industry partnerships with India

On 5 September 2014 the [Prime Minister announced](#) a further \$20 million over four years to extend the [Australia-India Strategic Research Fund](#). This announcement was made at the All India Institute of Medical Science, which is a partner in a multi-million dollar project supported by the Fund and partnered with Alfred Health and Monash University in Melbourne. The additional funding will further enhance the programme's focus on research with industry and other end users.

NICTA announces new lab in Queensland focused on industry engagement and wealth creation

On 24 September 2014, NICTA announced the opening of a [new Queensland lab](#) based in Spring Hill, Brisbane. The team based in the new premises will focus on bridging the gap between great research and industry engagement to deliver wealth creation for all Australians. The celebration featured addresses from leading research and business development experts, including Queensland's Chief Scientist Dr. Geoff Garrett.

International

EU: High Level Group's recommendations on innovation policy

On 16 September 2014, the European Union (EU) [High Level Group on Innovation Policy Management](#) completed its [second report](#), which aims to serve as a Blueprint for reforms of the European innovation policy in the next decade.

The EU High Level Group on Innovation Policy Management was launched in December 2011, tasked with elaborating recommendations on how to develop Europe's innovation policy. The Group aims to formulate a set of recommendations covering competitiveness, connectivity and inclusiveness and governance of the innovation ecosystem.

The Blueprint released in September provides the steps for the development and completion of European Innovation Ecosystems where governments, business, academia and citizens can interact to foster creative and bold thinking and a flexible, dynamic, stimulating and enabling environment allowing for innovation to drive economic growth, the creation of jobs, ground-breaking research and new solutions for societal and welfare challenges.

The Blueprint has been presented to the Presidents of the European Council, the Council of the EU, and the European Commission; and will be officially presented to the Competitiveness Council later this year under the Italian presidency.

UAE: Centre for government innovation launched

On 10 September 2014, His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice-President and Prime Minister of UAE and Ruler of Dubai, launched the [Mohammed bin Rashid Centre for Government Innovation](#) at the Emirates Towers.

The Centre aims to encourage and motivate innovation in the public sector through making available tools essential to formulate and develop organisational structures and procedures. It will also coordinate innovation labs in government entities to build capacity for innovation across the national workforce, including the government.

The Centre is expected to build a national database for innovative government initiatives and best international practices in this field. It will also consolidate

individual initiatives by government entities into a unified framework to better serve federal and local government entities in the country and preserve intellectual rights associated with innovations in this area. The Centre will also forge partnerships with specialised international institutions, universities and centres that drive innovation in government services.

UK: Proposals open for a National Institute for Materials Research and Innovation

On 10 September 2014, UK Chancellor of the Exchequer, George Osborne, welcomed plans for a potential new [National Institute for Materials Research and Innovation](#) in the north of England.

Chief Scientific Adviser Mark Walport has been considering options for the centre in response to the Chancellor's speech in June where he called for action to capitalise on the north's real strengths in scientific innovation and its importance in driving recovery there.

Central to this plan is the opportunity to build on the north's expertise in materials science – the development of super lightweight, strong and flexible materials that have applications across a range of industries including healthcare, energy or transport.

A decision on whether to proceed with the Institute will be announced in December 2014.

U.S., UK, Sweden, and Australia Launch Global Innovation Fund

On 23 September 2014, the United States, United Kingdom, Swedish, and Australian Governments, in partnership with Omidyar Network, a philanthropic investment firm, announced the launch of a new \$200 million [Global Innovation Fund](#). The Fund is designed to develop innovative new ideas for development, explore alternative finance and create economic growth opportunities.

Australia will contribute [\\$30 million over four years](#) to the Fund. Australia's contribution will focus on identifying innovative programmes that address the development challenges of the Indo-Pacific region. It will help facilitate sustainable development of Australia's close neighbours, and ensure the region has access to innovative approaches and private sector investment. The concept of investing in innovation includes trialing new approaches to build our knowledge and edge closer to success.

US: National Institute of Standards and Technology to support commercialisation via provision of technical expertise and resources

The National Institute of Standards and Technology (NIST) has launched an award to support its [Small Business Innovation Research \(SBIR\)](#) awardees by providing them with technical and business expertise and resources to promote the commercialisation of technologies developed through the SBIR programme.

“Commercialisation is the main intent of the SBIR programme,” NIST associate director for Innovation & Industry Services Phillip Singerman said on 22 August 2014. “[This award](#) will provide vital support to small companies seeking to launch new products that contribute to the growth of the US economy.”

Through its SBIR programme, NIST funds small businesses to conduct research projects related to its mission to advance measurement science, standards and technology to support US innovation and industrial competitiveness.

Non-profit entities, accredited higher education institutions, state or local governments or commercial organisations within the US are eligible to compete for a cooperative agreement under the Technology Commercialization Assistance Program (TCAP). The TCAP recipient will support NIST SBIR recipients in making better technical decisions, solving technical problems, minimising technical risks, and developing and commercialising new products and processes.

NIST anticipates funding a five-year project, beginning in FY 2015, with about \$60 000/year, subject to availability of funds. Applications closed on 23 September 2014. The full announcement is at the US [government grants website](#).

US: National Science Foundation to provide \$20m funding for two cloud computing testbeds

On 20 August 2014, the US National Science Foundation (NSF) [announced](#) two \$10-million projects to create cloud computing testbeds - named [Chameleon](#) and [CloudLab](#) - to allow the US academic research community to develop and experiment with novel cloud architectures and pursue new architecturally-enabled applications of cloud computing.

The two awards complement industry’s efforts and will enable academic researchers to experiment and develop cloud computing architectures that can support a new generation of innovative applications, including real-time and safety-critical applications, such as those used in medical devices, power grids, and transportation systems.

The new projects, part of the NSF Computer and Information Science & Engineering (CISE) directorate’s Research Infrastructure: [Mid-Scale Infrastructure - NSFCloud](#)

[program](#), continue the agency's legacy of supporting advanced networking research infrastructure.

Chameleon, the first of the projects, will support design, deployment and initial operation of a large-scale, reconfigurable experimental environment for cloud research, co-located at University of Chicago and University of Technology Austin, and will consist of 650 cloud nodes with five petabytes of storage.

The second project, *CloudLab*, supports development of a large-scale distributed infrastructure based at University of Utah, Clemson University, and University of Wisconsin, on which researchers will be able to build many different types of clouds.

US: National Science Foundation launches Community College Innovation Challenge

On 16 September 2014, the National Science Foundation (NSF) announced its [Community College Innovation Challenge](#) (CCIC) in which NSF is challenging students enrolled in US community colleges to propose innovative science, technology, engineering and math (STEM)-based solutions to real-world problems.

“Through this competition we would expect not only to identify innovators but also to see new ways for students, faculty, community and industry to work together,” NSF’s Division of Undergraduate Education leader Susan Singer said.

Teams who submit the top ideas will receive professional coaching and cash prizes.

Over 40 per cent of American undergraduates are enrolled at community colleges with groups underrepresented in STEM as well as first-generation college students comprising a significant portion of students on community-college campuses.

NSF is inviting teams of community-college students to identify key problems and propose innovative solutions in areas with potential for solving some of America’s most daunting challenges in topics such as Big Data, infrastructure security, sustainability in water, food, energy, and environment, broadening participation in STEM, and improving STEM education.

Teams must each consist of three to five students currently enrolled and in good standing at a two-year associate-degree-granting institution, as well as a faculty mentor and a community or industry partner. Up to 10 teams will be selected as finalists and invited to participate in a three-day Innovation Boot Camp, a professional development workshop on innovation and entrepreneurship, designed to hone skills applicable to commercializing ideas, using technology for social applications, communicating with stakeholders and creating business strategies.

Ideas may be submitted through 15 January 2015 via NSF's [CCIC website](#): www.nsf.gov/CCchallenge

US: Small Business Administration expands Impact Investment Fund

The Small Business Administration (SBA) has expanded the Impact Investment Fund (IIF), a feature of the Small Business Investment Company (SBIC) programme, as revealed in [the announcement](#) made on 25 September 2014.

The SBA launched the Impact Fund in 2011 as a five-year, \$1 billion pilot initiative to capitalise investment funds that seek both financial and social return. This announcement reaffirms SBA's commitment to impact investing beyond 2016. The agency will continue to allocate roughly \$200 million of its \$4 billion annual investment authority to Impact SBIC's investing in underserved areas and sectors of national priority. The detailed policy memo, outlining the new commitment is available at www.sba.gov/inv/impact .

In addition to extending IIF, SBA has made policy changes based on consultation with SBIC programme stakeholders and experts in the impact investment industry. Among the changes are that Small Business Innovation Research (or SBIR) and Small Business Technology Transfer (or STTR) programme grant recipients are now eligible for impact investments. Also, Impact SBICs presently must invest 50 per cent of their capital in businesses located in underserved communities, the education sector or the clean energy sector. Advanced manufacturing has been added to the list of eligible recipients.

US: Small Business Administration announces 2014 recipients of PRIME Grant Awards

On 15 September 2014, the US Small Business Administration (SBA) [announced](#) the 2014 recipients of SBA's Program for Investment in Micro entrepreneurs Act (PRIME) grant awards.

SBA administrator Maria Contreras-Sweet said, "PRIME grants are an important vehicle for the SBA to provide ladders of opportunity to underserved, economically disadvantaged small business communities."

PRIME grants are intended to help qualified community-based organisations provide training to small businesses with five or fewer employees that are economically disadvantaged, and businesses owned by low-income individuals, including those who live on Indian reservations and tribal lands.

Twenty-four non-profit organizations from 16 states and DC were named by SBA this year, with the grants ranging from \$94,000 to \$250,000. In 2014, the programme focused on two technical assistance approaches to strengthening business success:

Helping entrepreneurs implement automated financial accounting, financial reporting and inventory management systems; and

Promoting and assisting in the development of worker ownership and worker-owed cooperatives, especially in low income and underserved communities.

For more information on PRIME grants and a list of this year's awardees, visit the [SBA website](#).

Assessment of innovation performance

Innovation-active businesses continue to report an increase in business performance

On 18 September 2014, ABS released [Selected Characteristics of Australian Business—2012-13](#).

Innovation-active businesses continue to report an increase in business performances and activities from the previous year than non-innovation-active businesses. Highlights are:

- Twice the proportion of innovation-active businesses reported an increase in productivity and total number of jobs or positions compared to non innovation-active businesses.
- 50 per cent more innovation-active businesses reported an increase in profitability and income from sales of goods or services than reported by non-innovation-active businesses.
- Greater than twice the proportion of innovation-active businesses were likely to sell goods or services overseas than non-innovation-active businesses. In addition, almost twice the proportion of innovation-active businesses was likely to sell goods or services outside their respective state/territory but within Australia compared to non-innovation-active businesses.

Generally, 61 per cent of businesses had five or more competitors, indicating that Australian businesses operate in a competitive environment.

More than half of the businesses (55 per cent) had at least one barrier that significantly hampered their general business activities or performance, with the most commonly stated barrier being 'lower profit margins to remain competitive' (27 per cent).

This data release also provides an insight into how businesses are using information technology. 26 per cent of all businesses had a social media presence, 47 per cent had a web presence, while almost one quarter of all businesses had both (22 per cent).

Science, Research and Innovation Budget Tables

Since 1980, the Australian Government has released an annual statement of its expenditures on research and experimental development (R&D). This statement is now called the Science, Research and Innovation Budget Tables, and the [2014-15 edition](#) of the tables is now available on the department's website. In addition, and for the first time, all previous versions of the budget tables dating back to 1979-80 are

also available online. These documents provide an insight into Australia's innovation system as it has changed over time, and information on Commonwealth programmes, initiatives and organisations relevant to science, research and innovation.

The Commercialisation and Knowledge Transfer Section in the Portfolio Strategic Policy Division welcomes input on how future editions of the budget tables might be improved. Comments or suggestions can be sent to:

SRIBudgetTables@industry.gov.au .

Assessing Science: Lessons from Australia and New Zealand

The July 2014 issue of Nature Outlook titled 'Assessing Science', investigates how research is assessed in Australia and New Zealand. It highlights the heavy emphasis on research excellence in both countries research assessment systems but also notes recent work, particularly that of CSIRO, in considering the wider social, economic and environmental impacts of research.

The full copy of the issue can be accessed at the [Nature Outlook website](#).

New Creative Productivity Index to Help Foster Innovation in Asia

A report by The Economist Intelligence Unit for the Asian Development Bank titled '[Creative Productivity Index: Analysing creativity and innovation in Asia](#)' was released in August 2014. The report presents the results and analysis of the Creative Productivity Index (CPI) for a select number of Asian economies. This index gives policy makers a unique tool to assess how to foster creativity and innovation in Asia, which are crucial for accelerating the pace of growth of its economies.

Following are the key findings of the CPI:

- Japan leads the CPI, followed by Finland and the Republic of Korea;
- Myanmar, Cambodia and Pakistan are ranked as the least efficient innovators;
- Singapore leads the CPI for innovation inputs;
- Finland and Hong Kong (China) are best in the CPI for innovation outputs;
- Low- and middle-income economies will benefit most from policies to increase creative inputs; and
- There are many different dimensions of creativity that are captured in this report.

Finland and US were included for comparative purposes, and ranked second and fourth respectively. Australia was ranked eighth.

Events & conferences

High Performance Work Practices

The [Centre for Workplace Leadership](#) (CWL) is conducting a series of industry forums across the country over the coming months as part of a Department of Industry funded study that investigates the use of High Performance Work Practices (HPWP) in Australian manufacturing SMEs. The study will identify strategies for businesses to adopt HPWP to help them address the significant challenges in maintaining their competitiveness in the domestic and global economies.

At the first forum, held in Adelaide in September, CWL presented the preliminary findings of the research study and gathered feedback from industry stakeholders. The final report on the study, which is due to be finalised in early 2015, is expected to have relevance across a range of industries in the portfolio.

The 2015 National Science Week Grant Round

Australians interested in running a science event or activities for their local community will be able to apply for a [National Science Week grant](#) for 2015, when the grant round opened on 1 October 2014.

The grant round has a total value of \$500 000 with grants being awarded between \$2,000 and \$25,000. The grant selection committee will be looking for innovative ideas that help engage new audiences in a wide range of locations in different facets of science, technology, maths and engineering. Partnerships are held in high regard, as is co-investment that leverages the value of the grant funds.

National Science Week will be held from 15–23 August 2015 and the school theme for 2015 is *making waves* – the science of light, based on the International Year of Light.

Industrial Ecology in the Asia-Pacific Century

CSIRO and the National Institute for Environmental Studies in Japan are organising the conference, Industrial Ecology in the Asia-Pacific Century: Interdisciplinary science for building sustainable industrial systems and human settlements.

[The conference](#) will be held on 17-19 November 2014 at the Melbourne Conference and Exhibition Centre and includes the joint 11th International Society for Industrial Ecology (ISIE) Socio-Economic Metabolism section conference and the 4th ISIE Asia-Pacific conference. The Australasian Industrial Ecology Conference will also be running at the same time, providing opportunities for delegates from both conferences to network.

Publications

Bricolage as a path to innovativeness for resource constrained new firms

Senyard, Julianne, Baker, Ted, Steffens, Paul, & Davidsson, Per (2014). [Bricolage as a path to innovativeness for resource constrained new firms](#). *Journal of Product Innovation Management*, 31(2), pp. 211-230. Published March 2014.

Abstract

“Evidence suggests that both nascent and young firms (henceforth: “new firms”) — despite typically being small and resource-constrained — are sometimes able to innovate effectively. Such firms are seldom able to invest in lengthy and expensive development processes, which suggests that they may frequently rely instead on other pathways to generate innovativeness within the firm. In this paper, we develop and test arguments that “bricolage,” defined as making do by applying combinations of the resources at hand to new problems and opportunities, provides an important pathway to achieve innovation for new resource-constrained firms.

Through bricolage, resource-constrained firms engage in the processes of “recombination” that are core to creating innovative outcomes. Based on a large longitudinal dataset, our results suggest that variations in the degree to which firms engage in bricolage behaviors can provide a broadly applicable explanation of innovativeness under resource constraints by new firms. We find no general support for our competing hypothesis that the positive effects may level off or even turn negative at high levels of bricolage.”

Key drivers of student entrepreneurship: Experiences from an Australian University

O’Loughlin, Andrew. (2014) Key Drivers of Student Entrepreneurship: Experiences from an Australian University. Paper presented at [The ISPIM Americas Innovation Forum 2014](#), Montreal, Canada on 5-8 October 2014. The publication is available to ISPIM members at www.ispim.org

Abstract

“Understanding student intentions with regard to entrepreneurship as a possible career pathway is important for the development of the formal economy. Presented here are the results from a longitudinal study conducted between 2010-2014 involving a sample of 1,513 undergraduate students, of whom 54 agreed to be interviewed. The research is qualitative and has combined the Opportunity Structure with the Theory of Planned Behaviour to understand the reasons why students chose to start a business either just prior to, or within one year of entering university, and their intentions upon graduating.

The results show that many of these businesses sit within the informal economy, and may be categorised as low growth businesses with few skill requirements. Importantly, the research has discovered that these students are also highly strategic with regard to educational pathways, and many of these businesses are focused towards delivering and/or sustaining a particular lifestyle while at university.”

Innovation in the Australian Spatial Information Industry

Sawang, Sukanlaya, Zolin, Roxanne, Matthews, Judy, & Bezemer, Meriam (2014) [Innovation in the Australian Spatial Information Industry](#). In Stettner, Uriel, Aharonson, Barak S., & Amburgey, Terry L. (Eds.) *Exploration and Exploitation in Early Stage Ventures and SMEs*. Emerald Group Publishing Limited, Bradford, United Kingdom, pp. 211-236.

Abstract

“The research explores how firms in Spatial Information perceive and engage in innovation as a part of their business operation. We find that small firms define innovation very broadly and measure innovation by its effect on productivity or market success. Innovation is seen as crucial to survival and success in a competitive environment. Most firms engage in product and/or service innovations, while some also mentioned marketing, process and organisational innovations. Most innovations were more exploitative rather than exploratory with only a few being radical innovations. Innovation barriers include time and money constraints, corporate culture and Government tendering practices. The study sheds a light on our understanding of innovation in an under-researched sector; that is spatial industry. The findings can be used to develop strategies for a Intervention Programme to reflect and extend the patterns of innovation identified in this study.”

Innovation in the Public Sector: State of the Art

Brown, K. and Waterhouse, J. 2013. Innovation in the Public Sector: State of the Art (Eds.) S. Osborne and L. Brown, [Handbook of Public Sector Innovation](#), Edward Elgar, Oxon.

Abstract

“This chapter outlines and examines the State of the art in public sector innovation. It investigates inquiries into innovation and the associated reports to determine the approaches and shape of innovation in the public sector. It assesses the different trajectories both proposed and in evidence for innovation and concludes that by linking innovation and change, there is an agenda for change management, flexibility and adaptability to promote innovation and innovative ways of operating within the public sector.”

ATSE proposes an ‘Impact and Engagement for Australia’ metric

“Australia ranks poorly worldwide for our engagement between universities and the private sector, which is a contributing factor to our weak performance in commercialising the results of our research.

Australian Academy of Technological Sciences and Engineering (or ATSE) has proposed an [‘Impact and Engagement for Australia’ \(IEA\) metric](#), produced with data already collected as part of the Excellence in Research Australia (ERA) exercise, which the Academy believes will help incentivise university researchers to collaborate more with industry.”