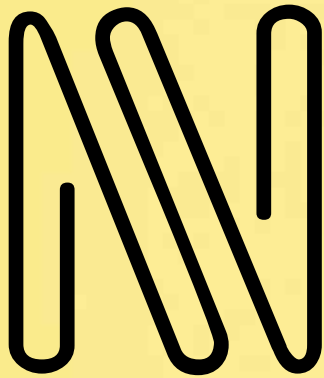




Australian Government



**NATIONAL
INNOVATION &
SCIENCE AGENDA**

WELCOME TO THE IDEAS BOOM

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National Innovation and Science Agenda

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ISBN 978-1-925238-17-4	National Innovation and Science Agenda (Hardcopy)
ISBN 978-1-925238-18-1	National Innovation and Science Agenda (PDF)
ISBN 978-1-925238-19-8	National Innovation and Science Agenda (HTML)

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National Innovation and Science Agenda

There has never been a more exciting time to be an Australian.

Advances in technology are transforming just about every part of our lives, from the way we work to the way we communicate and access services.

Innovation and science are critical for Australia to deliver new sources of growth, maintain high-wage jobs and seize the next wave of economic prosperity.

Innovation is about new and existing businesses creating new products, processes and business models.

It is also about creating a culture that backs good ideas and learns from taking risks and making mistakes.

Innovation is important to every sector of the economy – from ICT to healthcare, education to agriculture, and defence to transport.

It is about tech entrepreneurs working on the latest product but, equally, about farmers using sensor technology to improve yields, or a business bringing new products to market.

Innovation keeps us competitive. It keeps us at the cutting edge. It creates jobs. And it will keep our standard of living high.

Australia is well-placed to take advantage of the opportunities presented by these exciting times. But to succeed, there are areas where we need to improve.

The National Innovation and Science Agenda will focus on four key pillars:

1. **Culture and capital**
2. **Collaboration**
3. **Talent and skills**
4. **Government as an exemplar**

Together these pillars provide a framework for Australian innovation policy. The initiatives are worth \$1.1 billion over four years.

The National Innovation and Science Agenda will drive smart ideas that create business growth, local jobs and global success.

Australia has strong building blocks for success...

Strong economic fundamentals and a stable investment climate

Direct access to **markets in Asia** – the world's economic engine room

Global reputation as a **trusted source** of goods and services

Home to some of the **highest quality scientific research organisations** in the world

...but there are obstacles we need to overcome

Insufficient access to **early stage capital** for many startups

The lowest level of **industry-research collaboration** in the OECD

School students' **maths skills** are falling

Government following on innovation, not leading



Innovation for jobs and growth

A world of change

The pace of change, supercharged by new and emerging technologies, has never been so great, nor so disruptive.

It is being driven by rapid advances in computer processing power and data storage capacity, with an average smartphone more powerful than the combined computing power of NASA in 1969.

The Internet is also disrupting traditional jobs, businesses and industries in a manner that would have been unimaginable just a few decades ago. Uber, the world's largest ridesharing company, has disrupted the taxi industry, Airbnb the holiday rental market, Facebook the advertising industry and iTunes CD sales. The pace of change is more remarkable than the scale — Uber and Airbnb were both founded less than a decade ago.

The Internet is breaking down barriers to entry and presenting an enormous platform for innovation. Although the Internet exposes more local businesses

to new sources of competition, it also means that a larger and far wealthier global market has become accessible to Australia.

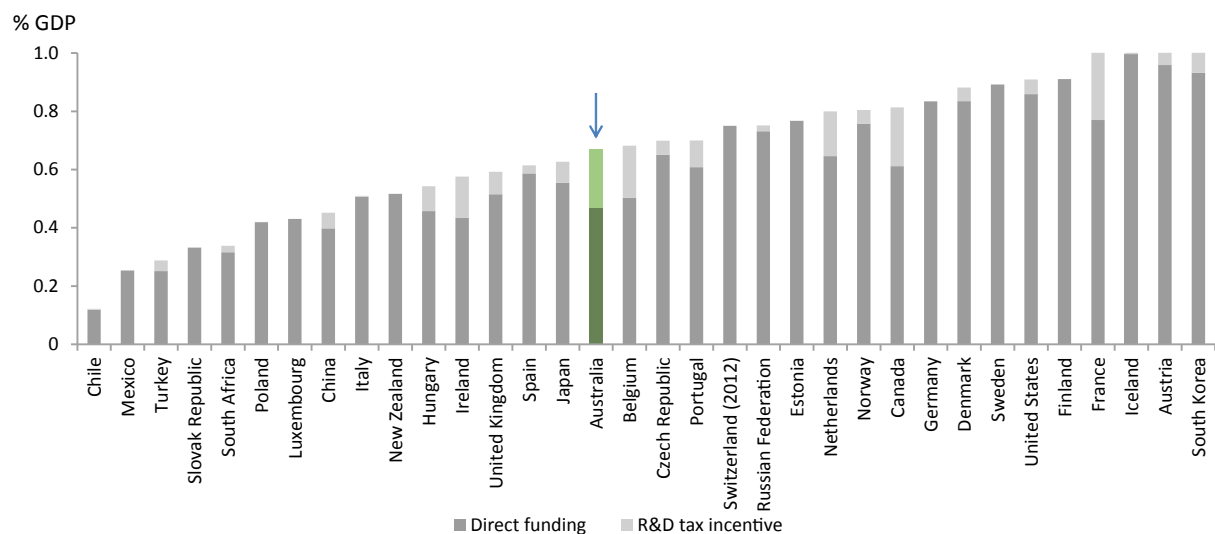
At the same time, economic convergence means countries that had, until recently, competed for low cost, low skill jobs are now competing for the most skilled and producing the most advanced products. For Australia this is both a threat and opportunity. Competition for market share is fiercer than at any point in history but it also means that more consumers have burst into the middle class.

Much of this growth has been and will be in our region — in the next 15 years China and India together will be home to over 2.3 billion middle class consumers.

Innovation for jobs and growth

Australia is in its 25th year of economic growth but faces new challenges as the mining investment boom comes to an end.

Government investment in R&D, by country, 2011





Innovation is critical to improving Australia's competitiveness, standard of living, high wages and generous social welfare net, but it is not the silver bullet. We must also build on the successful economic reforms of the 1980s and 1990s, lift government efficiency and improve competition, as proposed by the Government's response to the Harper Review.

While historically high commodity prices have driven the growth in our living standards over the last decade, fostering innovation and commercialising ideas will be a key driver of future jobs and growth.

Innovative firms are more competitive, more able to capture increased market share and more likely to increase employment than their competitors. Over the period 2006-2011, 1.4 million new jobs were created by firms aged less than three years old. Employment in mature businesses, in contrast, fell 400,000.

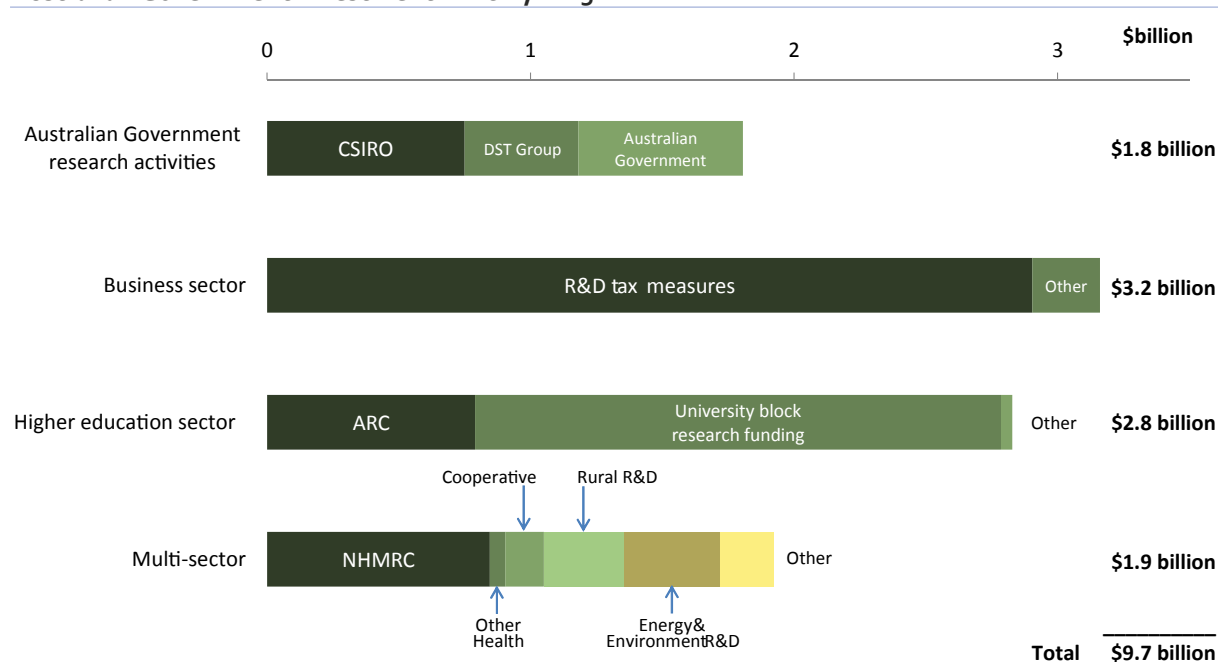
The role of government

Government supports innovation by investing in enablers such as education, science and research, and infrastructure; incentivising business investment; and removing regulatory obstacles such as restrictions around employee share ownership or access to crowd-sourced equity funding.

The Government is investing around \$9.7 billion in research and development in 2015-16. Around \$3.2 billion directly supports business sector R&D and much of the rest funds research in universities and research agencies such as CSIRO.

Government also enables innovation by investing in traditional infrastructure such as research laboratories, roads and rail and digital infrastructure such as the nbn, which currently passes 1.5 million premises, with construction to begin in areas covering almost 7.5 million premises over the next three years.

Australian Government investment in R&D, 2015-16



Boosting innovation and science in four key areas



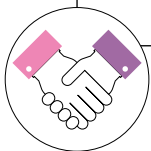
Culture and capital

Australians are renowned for their smart ideas, but we often fail to back them and turn them into commercial realities.

Only 9% of Australian small to medium sized businesses brought a new idea to market in 2012-13, compared to 19% in the top five OECD countries.

Our vision is for Australians to be confident, embrace risk, pursue ideas and learn from mistakes, and for investors to back these ideas at an early stage.

We will provide new tax breaks to **remove the bias against businesses that take risks and innovate**, and we will support greater private sector investment by **co-investing to commercialise promising ideas** through a CSIRO Innovation Fund and a Biomedical Translation Fund.



Collaboration

Australia's rate of collaboration between research and industry sectors is the lowest in the OECD. We need to encourage Australia's world-class researchers and businesses to collaborate to shape our future industries and generate wealth.

We will change funding incentives so that more **university funding is allocated to research that is done in partnership with industry**; and **invest over the long term in critical, world-leading research infrastructure** to ensure our researchers have access to the infrastructure they need.

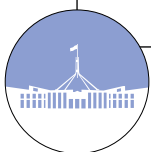


Talent and skills

Too few Australian students are studying science, maths and computing in schools – skills that are critical to prepare our students for the jobs of the future. We also need to create an environment that attracts the world's best talent to our shores.

We will support **all Australian students to embrace the digital age** by promoting coding and computing in schools to ensure our students have the problem solving and critical reasoning skills for high wage jobs.

We will also link Australia to other innovative economies and change the visa system to **attract more entrepreneurial and research talent** from overseas.



Government as an exemplar

Government has consistently lagged behind the private sector in innovation. We must back new ways of 'doing business' and learn from mistakes.

We will lead by example by becoming **more innovative in how we deliver services and make data openly available** to the public and make it **easier for startups and innovative small businesses to sell technology services** to government.

We will place innovation and science at the centre of the Government with a new sub-committee of Cabinet, and will establish Innovation and Science Australia as an independent advisory board.

Innovation and science at the core of the policy agenda

The Government has a key role to play in setting a vision for the future of the nation and putting in place the policies that allow Australians to succeed and prosper.

This Agenda is an important step on the path to a more innovative and entrepreneurial economy.

It builds on key measures we have already put in place, including:

- ✓ Establishing **Industry Growth Centres** in key sectors of competitive advantage: Advanced Manufacturing; Food and Agribusiness; Medical Technologies and Pharmaceuticals; Mining Equipment, Technology and Services; and Oil, Gas and Energy Resources
- ✓ Reforming **employee share schemes** to allow startups to attract world leading staff
- ✓ Delivering tax cuts through the \$5 billion **Small Business and Jobs Package**
- ✓ Signing three historic **free trade agreements** – with China, Japan and South Korea, and concluding the Trans-Pacific Partnership
- ✓ Delivering the **Entrepreneurs' Programme** to help our entrepreneurs get off the ground
- ✓ Supporting the teaching of **computer coding** across different year levels in schools
- ✓ **Reforming the Australian Curriculum** to give teachers more class time to teach science, maths and English
- ✓ Requiring that **new primary school teachers graduate with a subject specialisation**, with priority for science, technology, engineering and maths (STEM)

- ✓ Establishing a regulatory regime for **crowd-sourced equity funding**
- ✓ Improving regulation and **adopting international standards** where possible

This package of measures is not the end of the Government's commitment to nurturing a healthy innovation system.

We will make innovation central to all our major policies going forward. This will include a focus on innovation in the Defence White Paper and the Tax White Paper, and build on our responses to the Harper Competition Policy Review and the Murray Financial System Inquiry.

Part of being a Government committed to innovation is to lead by example and respond to changing circumstances.

We believe the measures in the Agenda put us on the right track to becoming a leading innovator. But we will also be open to adapting and changing course if things don't work. This is what an agile government should do.

A more innovative Australia will improve the quality of life of Australians across the country, from our cities and our regions, to our rural and remote communities.

Every Australian will benefit from an agenda that puts innovation and science at the heart of government.



Culture and capital

Australians have great ideas – both from our world class research and from traditional Australian ingenuity. We don't always make the most of those ideas, missing the opportunity to transform them into new businesses and new jobs.

We need a greater emphasis on celebrating success rather than penalising failure. This takes a cultural shift to encourage more Australians and businesses to take a risk on a smart idea. We need to leave behind the fear of failure, and challenge each other to be more ambitious.

We need to improve the availability of finance for our innovative startups. The period between initial funding to when a startup begins generating revenue is known as the 'valley of death'. During this time additional financing is usually scarce, leaving the business vulnerable to cash flow requirements.

Around 4,500 startups miss out on equity finance each year and access to additional finance is one of the main barriers to growth that startups face. Innovative businesses that don't have a track record and that are not following a proven methodology can find it particularly difficult to raise finance from traditional sources. Early stage investors, whether individuals or companies, can play a key role, both in providing direct investments and in contributing their business experience.

The venture capital industry is gaining momentum in Australia, with over \$600 million raised or planned since 30 June 2015. Confidence in early stage start up activity is strong, but this is primarily concentrated in the technology sector. It's important that we build on this momentum, improving funding for promising projects right across the economy.

The measures in this package will address this funding gap and help ensure a steady flow of investment opportunities through to later stage venture capital investors.

New initiatives

We are aligning our tax system and business laws with a culture of entrepreneurship and innovation.

- ▶ We will provide new **tax breaks for early stage investors** in innovative startups. Investors will receive a 20% non-refundable tax offset based on the amount of their investment, as well as a capital gains tax exemption. This scheme is based on the successful Seed Enterprise Investment Scheme in the United Kingdom, which has resulted in over \$500 million in funding to almost 2,900 companies in its first two years.

BACKING OUR INNOVATIVE ENTREPRENEURS BY OPENING UP NEW SOURCES OF FINANCE AND MAKING MORE OF OUR PUBLIC RESEARCH

- ▶ We will **build on the recent momentum in venture capital investment in Australia** including by introducing a 10% non-refundable tax offset for capital invested in new Early Stage Venture Capital Limited Partnerships (ESVCLPs), and increasing the cap on committed capital from \$100 million to \$200 million for new ESVCLPs.
- ▶ We will relax the 'same business test' that denies **tax losses** if a company changes its business activities, and introduce a more flexible 'predominantly similar business test'. This will allow a startup to bring in an equity partner and secure new business opportunities without worrying about tax penalties.
- ▶ We will remove rules that limit depreciation deductions for some **intangible assets** (like patents) to a statutory life and instead allow them to be depreciated over their economic life as occurs for other assets.
- ▶ We will also reform our **insolvency laws**, which currently put too much focus on penalising and stigmatising business failure. The Government understands that sometimes entrepreneurs will fail several times before they succeed – and will usually learn more from failure than from success. Accordingly, we will:
 - reduce the default **bankruptcy period** from three years to one year;
 - introduce a 'safe harbour' for directors from **personal liability for insolvent trading** if they appoint a professional restructuring adviser to develop a plan to turnaround a company in financial difficulty; and
 - **ban 'ipso facto' contractual clauses** that allow an agreement to be terminated solely due to an insolvency event, if a company is undertaking a restructure.

We will back high potential ideas with capital to help ensure they stay and grow in Australia.

- ▶ We will establish a **new \$200 million CSIRO Innovation Fund** to co-invest in new spin-off companies and existing startups that will develop technology from CSIRO and other publicly funded research agencies and universities.
- ▶ We will establish a **new Biomedical Translation Fund to co-invest \$250 million** with the private sector to increase the capital available for commercialising medical research within Australia and help ensure that our deep strengths in this area are leveraged to drive future growth.



INNOVATION IS THE OUTPUT OF A STRONG ENTREPRENEURIAL CULTURE. A CULTURE OF SPEED OF EXECUTION, EMPOWERMENT OF PEOPLE AND IDEAS, AND A TOLERANCE OF FAILURE AND OF THOSE WHO TRY

We will also back small businesses and startups to help them establish and grow. Over the decade from 2001 to 2011, SMEs aged less than five years employed only around 15% of the Australian workforce, but made the highest contribution (40%) to net job creation in Australia.

- ▶ We will **support incubators which play a crucial role in the innovation ecosystem** to ensure startups have access to the resources, knowledge and networks necessary to transform their ideas into globally scalable new businesses.
- ▶ To make it easier for promising businesses to hire and retain top staff, we will make existing **employee share scheme (ESS)** rules more user friendly. The new rules will allow companies to offer shares to their employees without having to reveal commercially sensitive information to their competitors. These changes build on the recent reforms to ESS, which included deferring the taxing point for employees and introducing an additional concession for those working in startup companies.

Track record

The Government has a strong track record in promoting an entrepreneurial culture and supporting businesses.

We have introduced generous tax concessions for startups who reward their staff through **employee share schemes**, allowing them to compete with established companies and to attract the best talent from overseas.

We have also introduced legislation to allow new companies to attract financing through **crowd-sourced equity**. The scheme allows companies to raise up to \$5 million per annum through this mechanism, which compares favourably to other countries such as the United States (US\$1 million p.a.) and New Zealand (NZ\$2 million p.a.).



Australia's successful startups

We need to support new businesses that disrupt and challenge the status quo – creating new opportunities and new jobs like SEEK and Atlassian.

For example, the jobseeking website SEEK was founded as a startup in 1997. SEEK is now one of Australia's top 100 companies with market capitalisation of over \$4 billion and over 500 employees in Australia and New Zealand alone.

In 2001, Mike Cannon-Brookes and Scott Farquhar founded Atlassian on a \$10,000 credit card. Today the enterprise software company is a multinational valued at over US\$3 billion and employs over 750 people.

Emma's startup journey to market

Emma sets up her new business, 3DPrintSmart Pty Ltd.

Emma spends \$500k on designing software for her new 3D printer. She receives a refundable tax offset through the **R&D Tax Incentive**.

Emma has a new idea to produce on-demand 3D printed parts for farm machinery



Emma accesses the expanded **Innovation Connections programme** to fund a scientist that helps co-design her prototype printer.

Alex, a savvy early stage (angel) investor, invests a further \$1 million in 3DPrintSmart and claims a 20% tax offset under the **Tax Incentive for Startup Investors**.

Emma needs a further \$10 million to produce and market her 3D printing services to farmers. A-OK Ventures invests \$10 million in Emma's business using funds from a range of investors who are eligible to claim a 10% tax offset under new reforms to **ESVCLPs**.

Emma starts selling her service to the market.

Emma's business becomes profitable and grows, creating local jobs. As a result, 3DPrintSmart will have greater access to deductions for previous tax losses through the **new Predominantly Similar Business Test**.

VALIDATE EXPLORE

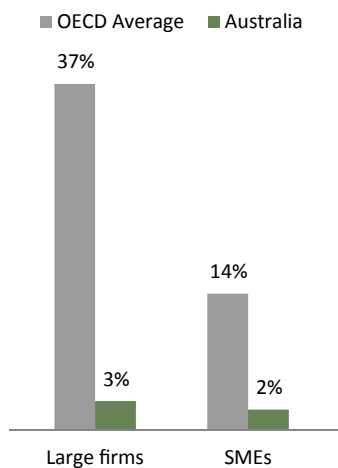
DEMONSTRATE

LAUNCH



Collaboration

We have the lowest collaboration rate between firms and researchers



Collaboration is about our brightest minds in research and business working together to create novel solutions and job-creating enterprises. Businesses that collaborate on innovation with research organisations are three times more likely to experience productivity growth, improved sales and exporting activity.

Despite these benefits, Australia's rate of collaboration between industry and researchers (at 2-3%) is currently the lowest in the OECD. Australian businesses do not have as much internal research expertise as key comparator countries either. At 43%, Australia's proportion of researchers employed in business is significantly lower than countries such as Germany (56%), South Korea (79%) and Israel (84%).

That's why this Agenda includes a package of measures to translate our world leading science and research into growth opportunities.

Track record

The \$20 billion **Medical Research Future Fund** has been established to provide a new, sustained increase in funding available for medical research and innovation.

Our **five Industry Growth Centres** will lift innovation, competitiveness and productivity to drive industry growth in areas of national competitive strength.

We have set **Science and Research Priorities** to help build capability and ensure that our world-class science and research efforts align to our needs.

We have developed an **Intellectual Property Toolkit**, with model contracts and case studies, to facilitate collaboration between research and industry.

We reformed the long-standing **Cooperative Research Centres** programme to enhance their focus on industry and growth sectors.



The Australian Technology Network of Universities (ATN) is responding to the need for increased collaboration with industry

The ATN represents five of Australia's technology focussed universities. At these universities, 70% of research income has come from industry and other end users since 2010, and 92% of ATN research is rated at or above world standard (2015).

The ATN is also partnering with business to engage doctoral students in solving-real world problems, through its Industry Doctoral Training Centre in Mathematics and Statistics.

INCREASING THE LEVEL OF COLLABORATION BETWEEN INDUSTRY AND RESEARCHERS TO FIND SOLUTIONS TO REAL WORLD PROBLEMS AND CREATE JOBS AND GROWTH

Australian Synchrotron

New initiatives

Building world-class national research infrastructure

- ▶ We will provide long-term funding certainty for cutting-edge, national research infrastructure to ensure research jobs stay in Australia and Australia retains the capability to be at the forefront of global discoveries. Over the next decade, the Government will provide \$520 million for the **Australian Synchrotron**, \$294 million for the **Square Kilometre Array**, while the **National Collaborative Research Infrastructure Strategy** (NCRIS) will receive \$1.5 billion. In 2016, Australia's Chief Scientist will undertake a process to identify national research infrastructure capability needs to inform where funding is required in future years.

Greater collaboration between universities and businesses

- ▶ We will introduce new arrangements to encourage collaboration between researchers and industry by **streamlining and refocusing a greater proportion of research block grant funding toward collaboration**. We will also provide an additional \$127 million over the forward estimates to research block grant funding.
- ▶ We will introduce, for the first time, **clear and transparent measures** of non-academic impact and industry engagement when assessing university research performance. This will be piloted through the Australian Research Council in 2017 and fully implemented by 2018.
- ▶ We will also connect more small and medium businesses with researchers by expanding and relaunching the successful Research Connections programme as **Innovation Connections**, opening up **Australian Research Council Linkage Projects to continuous applications** to fast track decisions on collaborative research grants, and opening a new application round for the Cooperative Research Centre programme in February 2016.

Linking to the world

- ▶ We will **increase linkages with key economies** to enable Australia to improve research, commercialisation and business performance, and access international supply chains and the global market. This will include providing access for entrepreneurial Australians to **landing pads** in Silicon Valley, Tel Aviv and three other locations, and leveraging the expertise of the Australian diaspora in key markets. We will also provide funding for Australian collaborations with **international research-industry clusters**, such as Leading-Edge Clusters and Fraunhofer Institutes in Germany.

Investing in the future of information technology

- ▶ We will establish a new **Cyber Security Growth Centre** to create opportunities for Australian businesses in this critical new sector. We will boost Australia's world class capability in **quantum computing** research by investing \$26 million towards building a silicon quantum circuit, with the potential to create new jobs and new business models.



Talent and skills

The talent and skills of our people is the engine behind Australia's innovative capacity. We are focussed on equipping Australians with the skills needed for high wage, high productivity jobs. We will also attract the best and brightest to Australia and do more to leverage our extensive diaspora and their networks by working with organisations such as Advance.

We need to expose more students to coding and computational thinking to equip our students with the problem solving and critical reasoning skills for the jobs of the future. Over the coming decades some jobs will be lost to automation but many other new jobs will be created in both new and existing industries.

The Foundation for Young Australians predicts that today's young people will hold as many as 17 different jobs, in five different careers, over the course of their working lives. Our education system, therefore, must equip students to be successful entrepreneurs, hold a diverse number of jobs or work across a number of industries.

Women hold around a quarter of STEM and ICT related jobs and are significantly underrepresented in high level research positions. We need to engage more girls in STEM and computing, and provide pathways to progress their interest across the education system and into careers.

Track record

To ensure that our young people have the skills they need for the future, the **Government has been leading nationally** by calling for and working with the States and Territories on a **national STEM School Education Strategy**.

In September 2015, the **Australian Curriculum** was endorsed by the COAG Education Council. The Curriculum includes a **digital technologies** element – and the Government has reinforced this with \$3.5 million for teaching coding, as part of the \$12 million restoring the focus on STEM in schools in 2014.

To **get the skills that businesses need now**, the Government has **been refining its visa settings** – including by improving 457s for startups so that they can access the workers they need right now.



Curious Minds - Inspiring girls' participation in STEM

As part of an Australian Government funded initiative, 54 school girls will be brought to Canberra in December for the first national all-girls *Curious Minds* STEM extension learning and mentoring programme.

School girls from diverse backgrounds will spend four days learning science, informatics and mathematics, mentored by inspiring women in science, including Professor Angela Moles (2013 Life Scientist of the Year), and young innovators such as Microsoft's Esther Mosad.

DEVELOPING AND ATTRACTING WORLD-CLASS TALENT AND PREPARING OUR WORKFORCE FOR THE JOBS OF THE FUTURE

New initiatives

Equipping young Australians to create and use digital technologies

To help Australians prepare for the jobs of the future, we are investing \$51 million in:

- ▶ Year 5s and 7s to learn coding through online computing challenges;
- ▶ Supporting and upskilling our teachers to implement the digital technologies curriculum through online learning activities and expert help; and
- ▶ Targeted ICT and STEM programmes like ICT Summer Schools (for Year 9s and 10s) and STEM partnerships to bring scientists and ICT professionals into classrooms.

Expanding opportunities for women in STEM

- ▶ We are investing over \$13 million to support the greater participation of girls and women in the research sector, STEM industries, startups and entrepreneurial firms; and
- ▶ We will celebrate female STEM role models and build programmes and networks that support workplace gender equality – such as the Science in Australia Gender Equity (SAGE) pilot – to realise our full potential as a nation through greater contribution from women.

Improving visa arrangements

We will bring entrepreneurs and other innovative talent to Australia by:

- ▶ Introducing a new Entrepreneurs Visa for up and coming entrepreneurial talent;
- ▶ Actively seeking out and encouraging talented individuals to come to Australia, using existing Government overseas networks; and
- ▶ Enhancing pathways to permanent residency for high quality STEM and ICT post-graduate students.

Inspiring STEM literacy

To inspire the next generation in STEM, right from the beginning and throughout their schooling, we are investing \$48 million in:

- ▶ Encouraging school students to participate and achieve in science and maths by supporting participation in international competitions and by introducing youth prizes in the prestigious Prime Minister's Prizes for Science;
- ▶ Engaging preschoolers with fun experiments, inquiry and play-based learning apps focussed on STEM concepts; and
- ▶ Backing science in our communities, with events such as National Science Week, that inspire STEM curiosity and knowledge in young people.



Government as an exemplar

We are committed to changing the way government delivers to Australians by trialling good ideas, sharing information, looking for innovative suppliers and changing our policies when they are not working.

It has often been easier for government to continue with the ways things have been done rather than embrace new technological opportunities. We are making government digital by default and opening up procurement and data to encourage innovation in Australian business. Digital technologies provide huge opportunities for government to deliver better services for less money.

The Government is actively leading the cultural and technological change required to ensure innovation is central to the way government operates. We are setting up a new independent board – *Innovation and Science Australia* – to act as a strategic coordinator of science, research and innovation policy across government and the economy.

Track record

We established the Digital Transformation Office to help government deliver simpler, faster and easier to use digital services to the public. It works across government agencies using agile techniques to fast track digital projects.

We are partnering with Pollenizer, an established Australian incubator, to **find, incubate and accelerate innovative business ideas that leverage openly available data** from the Australian Government.

InnovationXchange has been established within the Department of Foreign Affairs and Trade to **catalyse and support innovation across the Australian aid programme.**



ATO's Digital Disruption

The Australian Taxation Office has made tax and super help easily accessible through a new app.

In 2015, the ATO was recognised for being the first Commonwealth agency to deploy such a mobile app on all three major app stores after undergoing a major internal cultural transformation.

The ATO's mobile apps team designed, built and delivered the app in less than 10 weeks by engaging with key stakeholders and business partners.

THE GOVERNMENT WILL LEAD BY EXAMPLE BY EMBRACING INNOVATION AND AGILITY IN THE WAY WE DO BUSINESS

New initiatives

Placing innovation and science at the heart of policy making

- ▶ We are getting the governance settings right, so that there is a single body responsible for researching, planning and advising government on the long term strategic vision for innovation and science.
- ▶ We are establishing a new independent statutory board, **Innovation and Science Australia**, supported by a chief executive officer, accountable through the Industry Minister to a new Innovation and Science Committee of Cabinet, chaired by the Prime Minister. This will place innovation and science at the centre of policymaking.
- ▶ The board will take a coordinated view of policies that affect innovation to ensure that we implement this Agenda so that Australia builds a stronger, more entrepreneurial economy. One of its first responsibilities will be to review the current R&D Tax Incentive to improve its effectiveness and integrity, including by sharpening its focus on encouraging additional R&D spend, drawing on the detailed departmental review currently underway.

Encouraging innovation through government procurement

- ▶ We will leverage technology to improve services through the **Digital Transformation Office**, making government more accessible to startups and innovative small and medium businesses by breaking down barriers to technology procurement. These businesses will find it easier to compete for the \$5 billion that the Government spends a year on ICT through a **new Digital Marketplace**, to be built by the Digital Transformation Office. ICT products and services will be standardised and broken into component parts to reduce barriers to participation.
- ▶ We will also pilot a **new approach to government procurement through the Business Research and Innovation Initiative**. We will challenge small to medium enterprises to deliver innovative solutions for government, rather than tendering for an existing product.

Government joining the data revolution

- ▶ To promote innovation and make best use of the vast quantity of **public data**, we will remove existing barriers between the many different data holdings across government. Non-sensitive data will be made **openly available by default, in machine readable and anonymised forms** through data.gov.au so that the private sector can use and reuse it to create new and innovative products and business models.
- ▶ We will also ensure that Australia builds and maintains world-leading data science research capability through **Data61**. With cutting edge research in data analytics and cyber security, Data61 can help develop new technology-based industries and transform existing ones. Data61 will work with universities to expand its PhD programme where students work directly with industry to solve problems and develop new products, processes and services.

Appendix of measures



Culture and capital	2015-16	2016-17	2017-18	2018-19	Total
Tax incentives for angel investors	\$0m	\$3m	\$51m	\$51m	\$106m
New arrangements for venture capital investment	\$0m	\$0m	*	*	*
Access to company losses	\$0m	*	*	*	*
Intangible asset depreciation	\$0m	\$0m	\$20m	\$60m	\$80m
CSIRO Innovation Fund**	\$0m	\$5m	\$5m	\$5m	\$15m
Biomedical Translation Fund **	\$2m	\$6m	\$1m	\$1m	\$10m
Incubator Support Programme	\$0m	\$3m	\$3m	\$3m	\$8m
Improve bankruptcy and insolvency laws	\$0m	\$0m	\$0m	\$0m	\$0m
Employee Share Schemes	\$0m	\$0m	\$0m	\$0m	\$0m



Collaboration	2015-16	2016-17	2017-18	2018-19	Total
Critical research infrastructure	\$0m	\$15m	\$198m	\$245m	\$459m
Sharper incentives for engagement	\$0m	\$25m	\$51m	\$52m	\$127m
Global Innovation Strategy	\$0m	\$7m	\$9m	\$10m	\$26m
Cyber Security Growth Centre	\$0m	\$4m	\$7m	\$11m	\$22m
Innovation Connections programme	\$0m	\$3m	\$7m	\$8m	\$18m
Quantum computing	\$0m	\$5m	\$5m	\$5m	\$15m
Measuring impact and engagement in university research	\$2m	\$3m	\$2m	\$2m	\$9m
ARC Linkage Projects Scheme	\$0m	\$0m	\$0m	\$0m	\$0m



Talent and skills	2015-16	2016-17	2017-18	2018-19	Total
Inspiring all Australians in digital literacy and STEM	\$0m	\$26m	\$25m	\$33m	\$84m
Support for innovation through visas	\$1m	\$1m	\$0m	\$0m	\$1m



Government as an exemplar	2015-16	2016-17	2017-18	2018-19	Total
Data61	\$0m	\$25m	\$25m	\$25m	\$75m
Business Research and Innovation Initiative	\$0m	\$4m	\$10m	\$5m	\$19m
Digital marketplace	\$3m	\$5m	\$4m	\$4m	\$15m
Innovation and Science Australia	\$1m	\$2m	\$3m	\$2m	\$8m
Public data strategy	\$0m	\$0m	\$0m	\$0m	\$0m
Total	2015-16	2016-17	2017-18	2018-19	Total
National Innovation and Science Agenda	\$9m	\$143m	\$424m	\$521m	\$1,097m

* Unquantifiable

** The \$70m investment component of the CSIRO Innovation Fund and the \$250m investment in the Biomedical Translation Fund do not directly impact on the underlying cash balance.

Note: Totals may not add due to rounding. The funding in the table covers the forward estimates only but most measures have funding implications beyond the forward estimates, such as Critical research infrastructure (totalling \$2.3b over the next decade), Inspiring all Australians in digital literacy and STEM (totalling \$112m to 2019-20), Cyber Security Growth Centre (totalling \$30m to 2019-20), Quantum computing (totalling \$26m in funding to 2021-22) and Global Innovation Strategy (totalling \$36m to 2019-20).



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