

# recommendations

## Chapter 3

### **Recommendation 3.1**

Support business innovation as an explicit priority for Australia's innovation policy by incorporating the following objectives into programs aimed at building business innovation capacity:

- assist the generation and absorption of business knowledge by private firms;
- help private firms to secure returns and to appropriate value from undertaking inherently uncertain innovative business activities;
- foster the capacity for innovation at the company level in response to market and customer demands;
- facilitate economically useful connections between firms and other institutions for knowledge transfer and capability building;
- extend the global reach and market access of Australian firms; and
- increase the managerial, technical and collaboration skills and competencies of private firms.

### **Recommendation 3.2**

Extend the Enterprise Connect Program to include services firms and expand it to provide explicit business innovation services in conjunction with the existing business review and advisory services.

### **Recommendation 3.3**

Establish a new Knowledge Connections program within the Enterprise Connect Program, to work with Industry Innovation Councils in facilitating new connections and clusters crucial to the competitive advantage of firms in knowledge-based economies.

### **Recommendation 5.1**

On the basis that high quality human capital is critical to innovation, support:

- the human capital focus of the COAG national reform agenda;
- the broader national education reforms, and their central focus on raising teacher quality;
- innovation being considered as a key element of these and future substantial national reforms;
- a process to review currently inconsistent funding models for tertiary training in the creative arts, with the aim of producing a nationally consistent policy; and
- an examination of the most innovative educational reforms being pursued in other countries to benchmark our efforts.

### **Recommendation 5.2**

Innovation policy should be aligned with immigration policies to ensure that they facilitate Australia's access to the global talent pool. In particular, human capital should carry equal or more weight than economic capital in individual migration assessments.

### **Recommendation 5.3**

Establish a program to encourage and support professional bodies (working with educational institutions and State and Territory Governments as appropriate) to provide accelerated pathways to facilitate enriching professional transitions so as to make Australia a world leader in this area.

- The Advocate for Government Innovation (see Chapters 10 and 12) should develop priorities with the aim of developing some breakthroughs within eighteen months;
- An early priority should be further building pathways for key professions in which there are skill shortages. One such initiative would facilitate the entry of science and mathematics graduates into teaching; and
- The Minister for Education, Employment and Workplace Relations should make a statement on progress on this agenda within eighteen months.

## Chapter 6

### **Recommendation 6.1**

Adopt the principle of fully funding the costs of university research activities and implement through adjustments in funding to block and competitive grant schemes, without compromising grant success rates. Lessons from overseas and current government investigations should provide evidence for the full costs of university research and allow rapid transition to a full-cost funding model.

### **Recommendation 6.2**

Base the distribution of research block funding to universities on success in winning national competitive grants and on evidence of excellence in research, such as the research quality rankings to be produced by the Excellence in Research for Australia initiative.

### **Recommendation 6.3**

Develop a strategy to support the strengthening of publicly funded research agencies (PFRAs) within the National Innovation System over time, including urgent restoration of funding levels.

### **Recommendation 6.4**

In the short term, increase funding both for the PFRAs and the university research system to at least match the proportion of GDP that was allocated to them in the mid-1990s. In the longer term the goal should be to match investment levels of leading OECD economies.

### **Recommendation 6.5**

To build concentrations of excellence, encourage collaboration and achieve better dissemination of knowledge, introduce additional funding support for university and other research institutions to partner with each other and with other research organisations (national and international). Discussions about additional levels of support should occur during the projected round of compact negotiations.

### **Recommendation 6.6**

The implementation of new incentives around national challenges, including water, carbon emission reduction and related climate change and environmental initiatives needs to avoid further fragmentation of responsibilities and encourage consolidation.

### **Recommendation 6.7**

Australia should enhance its capacity to engage internationally by opening up current innovation granting programs to international partners and participants.

### **Recommendation 6.8**

The NHMRC should be resourced to deliver incentives designed to rationalise and consolidate Australia's health and medical research sector, including universities and independent medical research institutes, to achieve efficiency and effectiveness of the sector.

### **Recommendation 6.9**

Funds currently distributed under the Research Training Scheme and Australian Postgraduate Award (APA) schemes should be allocated to institutions on the basis of demonstrated excellence in research based on the research quality rankings that will be produced by the Excellence in Research for Australia Initiative.

### **Recommendation 6.10**

The research quality rankings from the Excellence in Research Australia initiative should be made publicly available to promote matching of the best research groups with the best doctoral students.

### **Recommendation 6.11**

The APA annual student stipend should be raised to at least match the current APA(I) stipend of around \$25,000 — and then indexed by average earnings; at the same time, the length of support provided under an APA should be increased to 4 years.

### **Recommendation 6.12**

Early career research fellowship schemes that incorporate up to two years of supported research experience in another country should be introduced.

### **Recommendation 6.13**

Establish a National Research Infrastructure Committee to advise on strategic directions in funding of national research infrastructure including landmark infrastructure.

## Chapter 7

### **Recommendation 6.14**

To ensure a sustainable research infrastructure strategy into the future, extend funding for a successor program to the National Collaborative Research Infrastructure Scheme (NCRIS) for 10 years including capital and operational support of \$150 to \$200 million per annum. The remit of such funding should explicitly include support for the humanities, social sciences and creative arts as well as the sciences.

### **Recommendation 7.1**

The Australian Government should experiment with the use of prizes to stimulate innovation. Funding should be modest – say \$5 million over two years with an external evaluation after three years.

### **Recommendation 7.2**

Patent law should be reviewed to ensure that the inventive steps required to qualify for patents are considerable, and that the resulting patents are well defined, so as to minimise litigation and maximise the scope for subsequent innovators.

### **Recommendation 7.3**

Professional practitioners and beneficiaries of the IP system should be closely involved in IP policy making. However, IP policy is economic policy. It should make the same transition as competition policy did in the 1980s and 90s to being managed as such.

### **Recommendation 7.4**

Firms asserting or defending intellectual property should have a right to opt out of ‘appellate double jeopardy’.

### **Recommendation 7.5**

Explore the potential of facilitating the emergence of auditable standards to encourage better comparative voluntary reporting of the quality of firm performance.

- Areas where substantial gains seem likely include:
- the quality of workplaces as proposed at the 2020 Summit;
- the quality of clinical units in hospitals that wish to participate; and,
- The performance of educational institutions at all levels in raising students’ academic scores.

### **Recommendation 7.6**

Facilitate favourable conditions for the development and use of new and emerging technologies by establishing appropriately funded enabling technologies strategies that:

- adapt or build regulatory frameworks to support the responsible and safe use of innovative services and products;
- support the science and metrology required to underpin effective regulation and capitalise on opportunities;
- foster public awareness and community engagement; and
- collect data and develop metrics to support evidence based policy development, monitoring and evaluation.

### **Recommendation 7.7**

Australia should establish a National Information Strategy to optimise the flow of information in the Australian economy.

The fundamental aim of a National Information Strategy should be to:

- utilise the principles of targeted transparency and the development of auditable standards to maximise the flow of information in private markets about product quality; and
- maximise the flow of government generated information, research, and content for the benefit of users (including private sector resellers of information).

### **Recommendation 7.8**

Australian governments should adopt international standards of open publishing as far as possible. Material released for public information by Australian governments should be released under a creative commons licence.

### **Recommendation 7.9**

Funding models and institutional mandates should recognise the research and innovation role and contributions of cultural agencies and institutions responsible for information repositories, physical collections or creative content and fund them accordingly.

### **Recommendation 7.10**

A specific strategy for ensuring the scientific knowledge produced in Australia is placed in machine searchable repositories be developed and implemented using public funding agencies and universities as drivers.

**Recommendation 7.11**

Action should be taken to establish an agreed framework for the designation, funding models, and access frameworks for key collections in recognition of the national and international significance of many State and Territory collections (similar to the frameworks and accords developed around Australia's Major Performing Arts Companies).

**Recommendation 7.12**

Funding agencies should consider eligibility for cultural and collecting agencies in gaining access to contestable research funding programs.

**Recommendation 7.13**

The role of institutions such as the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) should be broadened and strengthened in recognition of the special importance of preserving indigenous collections and the unique value of indigenous traditional knowledge and practices within Australia's innovation system.

**Recommendation 7.14**

To the maximum extent practicable, information, research and content funded by Australian governments – including national collections – should be made freely available over the internet as part of the global public commons. This should be done whilst the Australian Government encourages other countries to reciprocate by making their own contributions to the global digital public commons.

**Recommendation 7.15**

In a similar spirit the Australian Government should initiate a process whereby countries come together to fund prizes for innovations of international significance with a particular focus on the needs of the developing world.

### **Recommendation 8.1**

The set of taxation measures outlined below be considered as a package and the recommendations that may lead to cost-saving not be adopted in isolation from recommendations to restore the value of incentives to firms.

### **Recommendation 8.2**

The R&D Tax Concession be changed from a tax deduction to a tax credit.

### **Recommendation 8.3**

The existing R&D Tax Concession (the 125 percent R&D Tax Concession, the 175 percent Premium, the R&D Tax Offset and the International Premium) should be replaced with a Tax Credit in order to raise the level of business expenditure on research and development by providing a less complex and more predictable support mechanism. A 40 percent Tax Credit should be available to large firms with a refundable Tax Credit of 50 percent available to smaller firms with turnover under \$50 million.

### **Recommendation 8.4**

All R&D undertaken in Australia which meets relevant definitions be eligible for the tax credit.

### **Recommendation 8.5**

Risk management models be developed to maximise the extent to which the refundable tax credit can be paid more regularly – at least quarterly in arrears. Regard should be had to the likely benefit relative to administrative and compliance costs and the need to manage risk.

### **Recommendation 8.6**

R&D expenditure undertaken in Australia by foreign-owned firms be eligible for the 40 percent Tax Credit but excluded from the refundable Tax Credit.

## Chapter 9

### **Recommendation 8.7**

Refinements should be made to clarify the activities that should be supported by the Tax Concession or new Tax Credit. Further exploration may be warranted to see if there are practicable ways of expanding the definition of eligible activities to include some of the less technically risky activities involved in innovation in services. In the immediate term:

- R&D on open source programs should qualify for the multiple sale test;
- guidelines should be reviewed to clearly identify what is eligible activity; and
- appropriate measures be taken to heavily constrain ‘whole of mine’ and similar claims against the existing R&D Tax Concession program or proposed Tax Credit program.

### **Recommendation 9.1**

A *Competitive Innovation Grants Program* should be introduced to assist innovative firms, with limited access to capital, in the high risk, proof-of-concept and development stages. This program would be targeted at projects addressing identified national priorities for innovation. Successful firms would be required to repay grants from the royalties or earning streams accruing from commercial success. The program would seek to assist 200 innovative firms annually at a cost of \$150 million per year.

### **Recommendation 9.2**

The COMET program be expanded and continued for another five years, noting the scope for greater leverage arising from strong linkages to the Enterprise Connect initiative. A funding increase of at least 25 percent would maintain the levels of service and provide wider coverage across Australia. Further increases to extend the programme’s coverage should be considered in conjunction with the evolution of the Enterprise Connect network.

### **Recommendation 9.3**

A portfolio of collaboration and linkage programs be maintained to support productive partnerships in the National Innovation System and with partners globally.

#### **Recommendation 9.4**

The recommendations in the Review of the CRC Program *Collaborating to a Purpose* should be acted on immediately though Government should weigh carefully responses to the CRC Review drawing attention to serious anomalies arising from the recommendation encouraging cash and in-kind contributions from research providers.

#### **Recommendation 9.5**

A pilot linkage voucher scheme be introduced via the existing Enterprise Connect and COMET program to improve innovation linkages between small and medium sized enterprises and the research community. Each voucher would be worth up to \$15,000 and would be used to fund collaboration between small firms and public sector research organisations. The program would link 5,000 firms per year to public research agencies at a cost of \$50-\$75 million per year.

#### **Recommendation 9.6**

The Government consider strategies to attract international venture capital fund(s) to Australia as the base for investment in the Asia Pacific region, with the short term objectives of attracting a major US venture capital firm to Australia and strengthening Australian links into US capital markets.

#### **Recommendation 9.7**

The ABS be appropriately resourced to undertake annual collections of venture capital data to enable effective tracking of the market and the impact of government support.

### **Recommendation 9.8**

The Innovation Investment Fund program be maintained, with a fourth round implemented after 2012. The primary objectives of this fourth round be:

- (i) to invest in high growth potential firms;
- (ii) to expand the pool of skilled fund managers;
- (iii) to build downstream investor confidence in follow on investment; and
- (iv) to build institutional fund confidence in supporting early stage Funds.

To facilitate effective monitoring of the impact of government support to grow early stage ventures in Australia, adequate data on investee firms supported through the program should be collected to support robust longitudinal analysis. Ten new funds over five years to be established at a cost of \$300 million over 15 years.

### **Recommendation 9.9**

The Australian Government immediately establish a second round of Pre-Seed Funds. In further rounds the current absolute \$1 million cap per investee firm should be changed to a maximum \$1 million cap on the first tranche of investment, recognising the high risk nature of this early stage of investment where the availability and timing of alternative follow-on investment is uncertain. Four new funds should be established at a cost of \$100 million over 15 years.

### **Recommendation 9.10**

Modest facilitating grants to organisations of angel investors should be provided to support an increased profile, networking and an ability to mount investor-education programs.

### **Recommendation 10.1**

Consideration should be given to extending the platform created to enforce payments and administer income contingent loans through the tax system; for instance, by extending income contingent loans for tertiary education outside universities and for sole trader entrepreneurs seeking to fund innovative projects.

### **Recommendation 10.2**

An advisory committee of web 2.0 practitioners should be established to propose and help steer governments as they experiment with web 2.0 technologies and ideas. At least five substantial experiments should be established in different areas within two years to be evaluated within three. The Minister for Finance and Deregulation should have carriage of the initiative.

### **Recommendation 10.3**

An Advocate for Government Innovation should be established to promote innovation in the public sector.

The Advocate would:

- operate a scheme similar to Singapore's Enterprise Challenge;
- provide a source for funds and expertise for conducting randomised policy trials;
- manage a process by which agencies within government and also firms outside it were able to challenge established practices, administrative arrangements or regulation which obstructed beneficial innovation;
- provide specific 'project facilitation' assistance to firms seeking regulatory approvals in order to introduce worthwhile and innovative business practices;
- promote networks (including within federal, and state and territory governments) to maximise the dissemination of knowledge about worthwhile new approaches to issues faced by public agencies;
- operate as a repository of knowledge and resources to the Australian Government and participating State and Territory government agencies to promote tendering practices designed to maximise the scope for innovation in the supply of goods and services to government;
- establish a high profile national awards system to provide national awards for individuals, and public agencies at the Federal, State and Territory or local government level that make the greatest contribution to public sector innovation; and
- act in concert with an appropriate university partner(s) such as the Australia and New Zealand School of Government (ANZSOG), to hold an annual international conference on innovation in government, with the aim of it becoming the premier international conference on the subject – the Davos of public sector innovation.

### **Recommendation 10.4**

A rigorous policy of evaluating all Australian Government innovation programs – and other relevant programs – be established. In a way analogous to the requirement that new regulation cannot be implemented without adequate regulatory impact analysis, a policy should be adopted whereby new programs cannot be implemented without an adequate evaluation strategy and funding for evaluation including the collection of 'base data' to evaluate the effects of the program.

### **Recommendation 10.5**

Experimentation in innovative policy and administration should be a major theme of the current refashioning of federal relations. States and Territories should be able to bid for federal funds to pioneer innovative approaches and to have their innovations properly and independently evaluated. This could be taken up within the COAG National Partnership Rewards payments currently being negotiated.

### **Recommendation 10.6**

The Australian Government should recognise its role as an active participant in facilitating innovation through procurement practices. In this context, the Government should:

- actively manage its ability to enable and demand innovation in procured services and products given its significant presence as a major purchaser;
- in procurement, be open to participating in risk sharing in relation to innovation demanded;
- explore the use of forward purchase commitments as a means of fostering more innovative approaches to government procurement; and
- work with the State and Territories to implement a pilot Small Business Innovation Contracting program based on the US SBIR design principles, to strengthen the growth of highly innovative firms in Australia.

The Advocate for Government Innovation should operate as a source of expertise and seed funding for the resourcing of such approaches to procurement.

### **Recommendation 11.1**

National innovation priorities as set out in this Review, be a focus of innovation policy and activities and the National Innovation Council be charged with ongoing evaluation of the alignment of public innovation policy with National Research and Innovation priorities.

### **Recommendation 12.1**

The Prime Minister's Science, Engineering and Innovation Council should be replaced by a new National Innovation Council, chaired by the Prime Minister, and supported by a small but high level Office of Innovation. An International Innovation Advisory Panel would be formed to provide advice to the Council on international engagement.

### **Recommendation 12.2**

To more effectively coordinate the innovation activities of public sector research agencies and to provide a source of co-ordinated advice to the National Innovation Council, a Research Coordination Council should be established.

### **Recommendation 12.3**

The Minister for Innovation should be a joint signatory to any Cabinet proposals from across government significantly bearing on the national innovation agenda, to ensure co-ordination.

### **Recommendation 12.4**

Innovation Australia should be the single major agency responsible for delivering innovation program support for firms. Such programs would be delivered through the AusIndustry network.

### **Recommendation 12.5**

The Australian Government and State and Territory governments should adopt a framework of principles for innovation interventions (as set out in this Review) to enhance consistency in approach across governments and improve the overall accessibility and efficiency of the suite of interventions.

### **Recommendation 12.6**

That governments review the existing suite of programs and develop any new programs in the light of these principles. All program proposals should contain clear *ex ante* evaluation criteria, and provide for the provision or collection of relevant base line data before program implementation. Design principles and rules should be applied consistently. (See proposed design principles in Chapter 4 and Annex 4)

### **Recommendation 12.7**

That senior government officials develop a collaborative mechanism to oversee the agreed approach and report periodically to relevant Australian Government and State and Territory ministers.

**Recommendation 12.8**

That common metrics, performance indicators and mechanisms for collecting and sharing data be developed and adopted by all jurisdictions.

**Recommendation 12.9**

That governments together develop a single mechanism (such as a web portal) for providing information to clients about access to the full range of Australian and State and Territory government innovation programs.

**Recommendation 12.10**

The ABS should be resourced to ensure the longevity and international consistency of innovation data collections and their availability to facilitate effective policy development. The National Innovation Council should advise where additional data collection is required to produce its Annual Statement on Innovation.

**Recommendation 12.11**

An Annual Statement on Innovation should be prepared by the National Innovation Council and incorporate a clear set of framework indicators. (An initial proposal for these indicators is set out in Annex 12).

**Recommendation 12.12**

The Australian Government, with the guidance of the National Innovation Council, should establish rigorous and consistent evaluation processes for innovation programs in line with the principle that the function should be carried out on an arms-length and transparent basis.

**Recommendation 12.13**

A National Centre for Innovation Research should be established to advance knowledge of the innovation system through high quality, independent research which is strongly relevant to policy and practice.

