Research Infrastructure & Support in Australia

CAUL, March 2010
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Today’s Outcomes

Answering fundamental questions:

1. What does the Australian Government want to do with Research Infrastructure and Support?
2. How is the Australian Government achieving these aims?
3. What is left to be done for the Australian Government to achieve these aims?
4. Where do these aims complement CAUL’s priorities?
Background

“We should aim to create an open scientific culture where as much information as possible is moved out of people’s heads and labs, onto the network, and into tools which can help us structure and filter the information.”

Michael Nielsen, from the Report of the Review of the National Innovation System, venturousaustralia
The Research Environment

- Funding for research primarily from:
  - Australian Research Council (ARC)
  - National Health and Medical Research Council (NHMRC)
  - Block grants from DIISR

- Funding for research infrastructure from DIISR
  - NCRIS
  - Super Science
  - EIF Rounds
  - Block Grants (RIBG, SRE)
  - ARC LIEF
Government Context

- **2007**: Machinery of Government - separation of the Science & Research function from the Education portfolio, transferred to new Department of Innovation, Industry, Science and Research
- New focus on economic outcomes and bridging the gap between public and private sector research
- **2009**: Global Financial Crisis. Government investment focus shifts toward economic stimulus
Government Context (2)

Science & Infrastructure Division within DIISR now responsible for **3 key funding programs:**

1. National Collaborative Research Infrastructure Strategy (NCRIS):
   - $542m for research infrastructure 2006-2011 (inc. operational costs)

2. Super Science Initiative
   - $1.1bn for research infrastructure 2009-2013

3. Education Investment Fund (EIF) Competitive Rounds
Three Key Drivers

- Strategic Roadmap for Australian Research Infrastructure (2008)
Strategic Roadmap for Australian Research Infrastructure

Key Findings:

- The dominating and essential element to support linkages between capabilities is ICT, in particular the collaborative tools, networks, and mechanisms to facilitate the sharing of data.
- Continuing federal investments and research sector co-investment is required to provide the mix of facilities to meet growing computation needs.
Recommendation 6.14:

‘To ensure a sustainable research infrastructure strategy into the future, extend funding for a successor program to NCRIS for 10 years including capital and operational support of $150-200m per annum.

The remit of the such funding should explicitly include support for the humanities, social sciences and creative arts as well as the sciences.’
Powering Ideas (2009 Budget)

May 2009 Budget Rationale

- As the problems studied become more complex, so does the infrastructure needed to develop collaborative and multidisciplinary solutions.

- For example, climate change, astronomy, genomics and other data-intensive fields of inquiry all depend on large-scale ICT capabilities in data computation, integration, storage, distribution, as well as building the skills and capabilities in the people expected to operate them.
Powering Ideas

- The Australian Government’s innovation agenda
- Supported by $3.1bn in funding over four years
- Includes:
  - More support for University research
  - A Super Science Initiative
  - A New R&D Tax Credit
Powering Ideas

Super Science Initiative:

- $1.1bn boost for critical areas of scientific enquiry
- Includes $901m investment over four years in cutting-edge research infrastructure:
  - Space Science and Astronomy
  - Marine & Climate Science
  - Future Industries
- Also includes funding for:
  - 100 Super Science Fellowships
  - A National Enabling Technologies Strategy
  - An enhanced Science Communications program
Powering Ideas

Future Industries:

- Includes $182m for eResearch Infrastructure:
  - Data storage and collaboration tools through the Australian Research Collaboration Service (ARCS): $97m over four years
  - ICT utilities through the Australian National Data Service (ANDS): $48m over two years
  - Enhancements to the Australian Research and Education Network (AREN): $37m over three years
- In addition to $130m for High Performance Computing
- Total eResearch funding of $312m
Implementation
Coordination: NRIC

- National Research Infrastructure Council (NRIC):
  A high level group with a view across all infrastructure investments, including representation from the ARC and NHMRC
- Appointed by Minister (Senator Kim Carr), advisory to Government
- NRIC taking a long-term view and will provide ongoing strategic advice on investment in research infrastructure
Coordination: AeRIC

- Australian eResearch Infrastructure Council (AeRIC):
- Reconstituted in 2009 and meeting regularly
- Advisory to DIISR, with a focus on coordination between eResearch investments and strategic advice in the eResearch space
- Has undertaken to respond to NRIC discussion paper, and undertake its own strategic positioning
5 eResearch Measures

- The Pawsey HPC Centre for SKA Science in Perth
- An upgrade to Australia’s peak high performance climate change computing capacity
- Data storage and collaboration tools through ARCS
- ICT utilities through ANDS
- Enhancements to the AREN
Issues
Big Issues

- Government vs. Sector Participants (implementation mechanisms)
- Collaboration/interdisciplinary research questions and infrastructure investments at national/international scale vs. competitive University drivers
- Capital vs. operating costs and sustainability
- Skills, training, human capability
Links to Universities and CAUL

“The Council of Australian University Librarians’ (CAUL) mission is to support its members in the achievement of their objectives, especially the provision of access to, and training in the use of, scholarly information, leadership in the management of information and contribution to the university experience.” CAUL Mission Statement
Supporting your Mission

- ANDS sets out to establish the Australian Research Data Commons to enable research data collections to be discovered and reused.
- The Research Data Storage and Collaboration Infrastructure projects will improve data storage and support researchers’ ability to collaborate.
- The Australian Access Federation is working towards a production model that will support access to online resources in a controlled collaborative way – further underpinning research collaboration.
Future Directions
The pleasures and sorrows of EIF

- EIF is one of the three funds under the Nation-building Funds Act (2008).
- As such, EIF Funded Projects must be used to:
  ‘…make payments in relation to the creation or development of research infrastructure.’ (Ch.3)
- It also excludes:
  - Payment for ongoing operating or maintenance costs, particularly **staffing**
  - Funding of research and researchers
  - Cost-shifting from investments that states or territories would otherwise have made.
The pleasures and sorrows of EIF

- The Global Financial Crisis triggered a need for stimulative Government spending, specifically on infrastructure. This reflects the fiscal and policy priorities of the Australian Government.
- The provision of EIF funds under the *Nation-building Funds Act* (2008) has led to the infrastructure - heavy projects being pursued today.
Where we go from Here

- NRIC will be seeking sector input later this year on possible future models for investment in research infrastructure.
- This may present an opportunity to move to a model more closely resembling NCRIS in the future, particularly in recognising the human capital element of effective research infrastructure.
- In the meantime, there is a need to maximise the possibilities and benefits of the Super Science (EIF) projects.