



# **The NCRIS eResearch Capability – Status Report, 2014**

***Presentation to AeRO National  
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## Context

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- Development of the NCRIS eResearch investments over a nine year period
- Roll out of eResearch Infrastructure funded through NCRIS and Super Science concluding
- Need to consolidate a view about progress
- In doing so, seek qualitatively rich feedback from research communities and infrastructure providers and users.



# Providers Within Scope

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- Australian Access Federation- AAF
- Australian National Data Service-ANDS
- National Computation Infrastructure -NCI
- National eResearch Collaboration Tools and Resources - NeCTAR
- National Research Network- NRN
- Pawsey Centre
- Research Data Storage Infrastructure-RDSI



## Method

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- Testing of the issues in the Terms of Reference with a wide range of respondents (60 submissions received)
- Carried out by the Reviewer assisted by a Review Panel
- Interim findings explored further by testing issues with the responding community (Canberra Workshop, December 2014)
- Report of findings (themes and recommendations) finalised mid January.



# The Terms of Reference Issues

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- APPROPRIATENESS (Market failure, transformative and collaborative effects)
- EXPECTATIONS
- CONTRIBUTION TO TECHNOLOGY
- GOVERNANCE
- TAKE-UP
- LESSONS LEARNED
- COMPARISONS
- INFLUENCES AND CONSTRAINTS



# Appropriateness

## The Market Failure question

- The view that the Australian government investments were a response to market failure is expressed by almost all respondents and providers
- In some cases some elements of the capability were differentiated in the discussion of responding to market failure, eg the possibility that federated access and approaches to research data storage may have developed in some other way. Frequently, and as solicited by the questions, views have included comment on the rate and likely timescale for any similar development in the absence of Australian government investment



## Appropriateness (c'td)

- the effect of the investment has been transformative
- there has been a more dynamic impact in some disciplines than others
- the deliberate construction of infrastructure investments as “collaborative”, generated further (and desirable), collaborative behaviour among researchers



# Expectations

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- Many, though not all, expressed the view that expectations have been met, and in some cases exceeded.
- There was uncertainty about what funder expectations were, at least as understood or perceived at the local level.





## Contribution to Platform

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Most stakeholders and all providers consider that the investments have led to the development of a “platform”, although there is some disagreement here. There is however, an issue about what constitutes a “platform”.



## Complementary (leveraged) Investments

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All provider and nearly all stakeholder responses describe complementary investments at state and or institutional level. There is significant commentary about the coordination of these investments, and the extent to which they may have realised greater potential if better coordinated.



## Leveraging Intentions

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Almost all responses describe a future intention to leverage, although the question seems to have been interpreted as also applying to the leveraging of future investments as well as those to date.



## Governance

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There were mixed views about governance, ranging from satisfaction (and some praise), to dissatisfaction. This issue in particular saw stakeholder respondents differentiating elements of the capability. The most general theme emerging was widespread concern about national coordination and coherence of the elements of the capability.



## Take Up - Extent

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Take-up has been described as generally good, and the evidence in the submissions is extensive.

Concern about two of the elements developing more slowly than expected is found among many stakeholders, with NeCTAR and RDSI identified in particular in this regard.



## Take Up – Room for Improvement

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- Need for greater funding certainty.
- More focused effort on outreach and awareness raising.
- Stronger coordination among the elements.
- More technical support skills, and
- A focus on relevant training for research groups.



## Take Up - Barriers

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Barriers nominated canvass the issues raised in the responses about improvement, with wide concern about investment in skills and expertise, as well as the recurring theme of the need for stronger integration, and more sustainable funding.

Providers mentioned the complexity and novelty of their service offerings in some cases, as a barrier.



# Lessons Learned

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These include:

- the need for stronger focus on communication and marketing,
- integration, (particularly the way in which engagement was complicated by the separate branding of the elements),
- project management and governance,
- the extent to which investment might have been better if lead by domain or discipline groups rather than functionally (not a majority expressed view),.....





## Lessons Learned (continued)

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- practical learnings from the experience of different rollouts for different elements,
- ways of engaging end-user researchers more systematically in the development of the investment plans, and
- concern about the overall approach in the distribution of funds among the various “horizontal” components



# Comparisons

A general finding is that there is significant confidence and pride in the achievements in Australia to date, with some expressions of concern within this overall sense of confidence. These involve

- the sustainability of the approaches taken in Australia,
- the extent to which the HASS disciplines have not developed at the same rate as international comparators,
- Australia's performance in terms of HPC capability at both peak and institutional level, and
- the integration of the effort.



## Comparisons (continued)

- Those elements (of the seven) where comparisons are readily made, are regarded as having performed/achieved very well by international standards with some singled out as world leading.
- In terms of industry, there were mixed and ambiguous views about the comparison between Australian eResearch infrastructure investments and development in other industries or sectors



# Budgetary Influences and Constraints

Widespread commentary on the sustainability of the budgetary approach. This includes

- extent to which innovation might be restrained at the local level, because of a lack of confidence about resource replacement after a granting or investment phase is completed.
- Constraints relating to capital versus operating expenditures which were the conditions of some of the investments.
- By and large, there was no criticism overall of quantum, but there was commentary on balance and timing.



# Other Influences and Constraints

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The structural issues cited included:

- fragmentation in governance,
- unwieldy nature of managing state level co-investment,
- insularity of projects as they developed,
- some technology immaturity.
- technology skills shortages



## Overall.....

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Strong sense of achievement and benefit with many examples and instances.

Some distinctive features of the Australian collaborative infrastructure investment strategy.

Within that, the issues about implementation and sustainability just mentioned.

Several cases where it seemed useful to the process and the Review Panel to tease out themes emerging.



# Workshop (seven themes)

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1. The Model (Structure and Coordination)
2. Collaboration
3. Domains, Platforms and Disciplines
4. Data and Data Centric Science
5. Commercial v Sector Developed Infrastructure
6. Industry/Infrastructure Nexus
7. Leadership and Expertise



## Recommendations (1)

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- Linkages

***Future eResearch infrastructure strategy include the consideration of means by which research community inputs and funding Council linkages will be developed and maintained.***





## Recommendations (2)

- Governance

*In any future deployment of a Lead Agent based investment approach, specific and detailed project standards be in place for governance and management. These standards will need detailed development and should specify the ways that Lead Agents and Boards, (a) provide oversight, and (b) guarantee optimal coordination and national integration. This approach should be enhanced through regular intersection with a (small) coordination and leadership group whose purview crosses eResearch projects, and which provides advice and cross-project integration.*



## Recommendations (3)

- Flexibility

*Greater, more explicit flexibility should be built in to future project approaches to allow the making of fit-for-purpose choices at relevant points in project development, with particular reference to commodity procurement to underpin service provision.*

*Constraints which would oblige outlays on capital rather than operating expenses, (or any similar limitation) should be eliminated, or minimised.*



## Recommendations (4)

- Skills and Expertise

***Future framework planning consider the continuing need to address both research workforce and technical support skills and expertise, and take up the issue of preferred strategies at both institutional and national levels. This should involve research agencies and institutions. Discussion of the approach with the university sector collectively is needed.***



## Recommendations (5)

- Approach to Provision and Dispersal of Funds for Infrastructure

*Where a Project is charged with a further subdivision and allocation of funds to develop infrastructure, the potentially inhibiting effect of any competitive process on collaborative approaches be anticipated, and the risk mitigated. Accountability for the decisions taken in such allocation processes should lie beyond the Project itself.*



## Recommendations (6)

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- Industry Involvement

***Consideration be given to a more formal involvement by industry in framing future national approaches to Australian eResearch infrastructure.***



## **Questions/Discussion**