

Submission

2016 National Research Infrastructure Roadmap Capability Issues Paper

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Question 1: Are there other capability areas that should be considered?

I commend the inclusion of the Understanding Cultures and Communities in the Issues Paper, and appreciate the real thought and hard work that clearly has been given to these concerns.

However, I would encourage a more closely articulated sense of the clear interrelations between the capability areas enumerated in this issues paper. My sense is that the paper as it stands might more adequately address the *inter-relationships* between the conventionally drawn capability areas focused on traditional disciplinary knowledges.

More specifically, there are clear research connections between the Understanding Cultures and Communities area and that of Health and Medical Science (seen for instance in the relationship between social history and anthropology with epidemiology and public health); between research in the material world in the humanities and Materials Research as described in the issues paper; between human geographies and environmental history, and Natural Resource Management; and between studies of local and community distinction, social inclusion and National Security.

If this issue were more directly addressed, the paper might more usefully focus upon the opportunities for wholistic and/or cross-disciplinary approaches that are a feature of the emergent epistemologies of the 21st century. Research and related studies that *cross* the traditional 'two cultures' divide hold greater promise in our time, characterised by compelling economic, social and technological disruptions. Such 'hybrid' research work is also implicated in the drive for a more flexible and innovative national economy, as we move on from a period in which we were focused on extractive industries to drive national productivity and affluence.

By way of example, I offer the following case. There has been a deal of work done over the past decade and beyond in the connections between social and cultural knowledge of environments and landscapes, and human resource management research. In particular, there has been global interest in Indigenous knowledge systems and human resource management issues in this century, yet I see little awareness of this in the paper (see, for instance, Sue Jackson, 'Compartmentalising Culture: the articulation and consideration of Indigenous values in water resource management', *Australasian Journal of Environmental*

Management, 2013; CR Menzies, *Traditional Ecological Knowledge and Natural Resource Management*, University of Nebraska Press, 2006; [F Berkes](#), J Colding, [C Folke](#) (eds), *Navigating Social Ecological Systems: Building Resilience for Complexity and Change*, CUP, 2003; note also CSIRO's work in this area

<http://www.csiro.au/en/Research/LWF/Areas/Ecosystems-biodiversity/Managing-landscapes-for-biodiversity/Indigenous-NRM>).

My contention is that investment in national research infrastructure that promotes *connection* between big data sets that exist within these capability areas will drive opportunities for new research across the traditional divides that exist in our national research effort. More specifically, this means investment in ensuring that the Australia's vast storehouses of cultural heritage and knowledges – which might be understood broadly as existing within the Understanding Cultures and Communities capability area - are made accessible and then associated with data in the other capability areas. In particular, while exemplars such as Trove point to possibilities in this area, we would benefit from research infrastructure which supports discoverability and accessibility of cultural collections and associated data of the nation (estimated at 115 million+ items in 2004), in ways that seamlessly associate this data with other sets such as those of the *Atlas of Living Australia*.

Question 2: Are these governance characteristics appropriate and are there other factors that should be considered for optimal governance for national research infrastructure.

I note the suggestion in this section that mentions the need for governance structures to support cooperation between capability areas, and would encourage that this to be more directly addressed and teased out in the section on Governance. The issues raised above are the result of a fundamental division that exists in our thinking about the humanities and sciences, which in turn structures our approach to research governance. In the first instance, the Commonwealth's approach to the development of Science and Arts policy – currently separated by virtue of their differing portfolios – might bear some closer examination. It is interesting to note that while we associate research in the sciences with industry and innovation, heritage, culture and the arts are commonly associated with other policy trajectories. This may have the effect of over-determining how we deal with questions of investment in research infrastructure, which in turn affects the opportunities we create (or fail to create) for research that meets the needs of the age in which we live.

Question 3: Should national research infrastructure investment assist with access to international facilities?

Investment in enabling research access to digital data sets in this country should be undertaken with a clear view to their association with comparable data in other countries. This is happening in terms of the informatics of the *Atlas of Living Australia*, and those of the *Global Biodiversity Information Facility*, *The Biodiversity Heritage Library*, the

Encyclopedia of Life and others. However, investment in making cultural, arts and heritage data accessible in tractable digital formats must allow for association of that data with comparable sets abroad, such as those of *Europeana* and the *Digital Public Library of the United States*.

Question 4: What are the conditions or scenarios where access to international facilities should be prioritised over developing national facilities?

We have a responsibility to ensure that the culture and heritage of Australia is accessible for researchers nationally *and* internationally. Australian experience in these domains can directly feed into global research agendas regarding Natural Resource Management, Health and Medical Sciences, and National Security. For too long, Australians have regarded their cultural records and documents as having research interest principally in this country, whereas in truth the cultural knowledges of Australia are part of a broader global understanding of human experience. As a result, they should be available to promote research that seeks to connect the human and non-human records of this continent to those of other places around the world. Enhancing research infrastructure in this country to enable access to cultural records and materials is both nationally important but also internationally significant – as long as the infrastructure promotes interoperability with international data sets.

Question 5: Should research workforce skills be considered a research infrastructure issue?

In terms of the paper's discussion of the Understanding Cultures and Communities area, I applaud the fact that Australia's cultural and related institutions are here regarded themselves as national research infrastructure. It therefore follows that support for training and development of staff in these institutions, at present and for the future, is actually a question of ensuring adequate research infrastructure for the nation. Therefore, staff skills development, and the training of the next generation of specialised professionals and researchers for these organisations, might be better supported. In particular, I think the Emerging Directions area could usefully articulate the connections between our vast cultural collections and emerging knowledges, and their capacity to support and drive researchers and practitioners in creative and digital industries. This is research capability translated into applied proceeds that can impact national and international economies.

Question 6: How can national research infrastructure assist in training and skills development?

There should be a clear reciprocity between the hardware and program of research infrastructure, and its human capital. That is, when we are thinking about developments advocated for specifically in this response, that is the creation of better digital discoverability and access to the nation's cultural collections to drive research that is

connected to other big data sets, then we might usefully understand investment in human resources for these developments as central to their success.

Question 7: What responsibility should research institutions have in supporting the development of infrastructure ready researchers and technical specialists?

Research institutions clearly have a responsibility for developing researchers and technical specialists in respect of such infrastructure. But I would also make the point that institutions need to be adequately supported to deliver upon that responsibility.

Question 8: What principles should be applied for access to national research infrastructure, and are there situations when these should not apply?

In broad aspect, the principle should be to enable as wide access as possible to research infrastructure while ensuring that research outcomes are not compromised. Clearly, in case of infrastructure where access must necessarily be limited, then establishing clear and transparent criteria for access to such facilities is important. In these cases, use of such infrastructure should be predicted on the excellence and public value and utility of the anticipated results of the research project.

Where possible, however, such as in the case of large digital data sets, the principles might also ensure wide access, even if such access may be managed at different levels consistent with promoting excellence and utility. There are also considerations regarding cultural appropriateness of access to Aboriginal and Torres Strait Islander materials. Such questions must be addressed sensibly and with due care and respect for Indigenous Cultural and Intellectual Property Rights.

Question 10: What financing models should the Government consider to support investment in national research infrastructure?

Given the fiscal constraints faced by Government, there is an opportunity for looking more actively at matched funding approaches and collaborative funding agreements to underwrite costs of national research infrastructure. In some cases, such as in the provision of infrastructure to support access to digital data sets, there may be some opportunities to derive income from non-research sector uses of such materials.

Question 12: Are there international or global models that represent best practice for national research infrastructure that could be considered?

In Australia, we have a strong exemplar in *Trove* of the possibilities of connecting researchers with the important cultural materials of the nation. This provides a strong domestic base upon which to build, in respect of further development of a cultural materials and knowledges portal that can 'spatialise' cultural data and allow for its association with other geographically specific data sets, such as the *Atlas of Living Australia*. Moreover, a digital database such as *Europeana* (<http://www.europeana.eu/portal/en>) is broadly

understood as an example of a model that can provide both research access to cultural materials as well as deliver a broader public dividend through open access. This bringing together of opportunities for researchers and the public to engage in discussion and debate around cultural knowledges also has its own intrinsic value.

Understanding Cultures and Communities

Question 24: Are the identified emerging directions and research infrastructure capabilities for Understanding Cultures and Communities right? Are there any missing or additional needed?

In terms of emerging directions in this area, I think we might more directly look at research questions – particularly in related areas such as National Security and Natural Resource Management – from a new cultural politics that regards the traditional relationship between publics and cultural consumption as too linear. There is a very clear public desire to express and participate widely in ideas creation, and there is the prospect of material benefit in humanities research by promoting wide access to big data sets while managing the politics of such access. By extension, this requires us to think about the implications of changed categories of custodianship, proprietorial rights and public use.

I think the section on Current Capabilities and Emerging Capability Needs is limited, and might have more clearly connected this capability area to some of the others by focusing on particular current and emerging needs. It is welcome to see a focus on the support for the integration of data sets that reflect the activities and human actions in cities, with an emphasis on sustainability policy development. However, there is a great need to connect social and community data with our knowledges of local natural heritage, specifically looking at linking cultural data to our understanding of natural systems change, at local and regional levels. Moreover, cultural data on industrial agricultural landscapes and communities are directly related to emerging research and policy development in Natural Resource Management, as I have argued above.

The impact of global information flows on our national security is well known, and yet there might be more included here to address the obvious opportunities for research that connects local, distinctive cultural knowledges to national communities, in ways that promote social inclusion and community well-being. This is also true about the opportunity we have to research and understand the links between cultural knowledges and opportunities, community well-being and public health.

Question 26: Is there anything else that needs to be included or considered in the 2016 Roadmap for the Understanding Cultures and Communities capability area?

In terms of the infrastructure that we need to unlock research potential in Understanding Cultures and Communities, the creation of a humanities counterpart to the *Atlas of Living*

Australia would unlock the cross-disciplinary research potential of these data, with material benefits on all sides. By creating spatialized access to cultural data that links collections and related information to the natural, built and intangible heritage data that already exists – through for instance the *Atlas of Living Australia* – we might create the conditions for the kind of creative endeavour in research that can deal with a rapidly changing world.

In this globalised world in which popular and nationally strident arguments are increasingly made, a capacity to support investigation and research on the place-based intersections of cultural values and knowledges is indispensable to developing research and supporting active, creative citizens. This has clear potential for creating knowledges to enhance our capacity to deal with climate change, the changing relationships between material and virtual worlds, threats to national security posed by global information flows, and our use of demographic/cultural information to understand population health and well-being.

Other comments

In respect of the Attachment C that maps the research infrastructure capability focus areas against the National Science and Research Priorities, I would respectfully submit that the Understanding Cultures and Communities capability area needs to be mapped against more than simply 'Transport'. In fact, it seems limited to have made this singular association, when there are clear links with this capability area and almost all those other priority areas, particularly food, soil and water, energy, resources, environmental change and health.

I strongly encourage the authors to reconsider this, and apply a more contemporary approach to enabling research opportunities beyond conventional taxonomies of human knowledge and understanding.

Thank you for the opportunity to comment on this issues paper.

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