

# Submission

## 2016 National Research Infrastructure Roadmap

### Capability Issues Paper

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I welcome the opportunity to comment on this important paper. , I do so as one of Australia's leading researchers in the new and highly experimental field of Digital Humanities. I have been a chief investigator on a number of ARC funded research projects with major outcomes in digital forms. They include South Seas: Voyaging and Cross-cultural Encounters in Oceania, 1760-1800; the Gugu Bahdun Oral History Project; and Return, Reconcile, Renew: Understanding the History, Effects and Opportunities of Repatriation and Building an Evidence Base for the Future. I am a past President of H-Net, Humanities and Social Sciences Online, a past member of the Austrian Academy Digital Corpus Project Scientific Advisory Board. I have held visiting Professorships in digital humanities at Michigan State University and the University of Kentucky. My research on the development of using digital technologies to document Indigenous histories has been recognised by awards including that of Australian-American Fulbright Senior Scholar. I am currently Vice-President of the Australasian Society for Digital Humanities.

#### Questions

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

Progress in solving the most pressing challenges we face on global, national and local scales requires innovative research, not only in fields of science, technology and engineering (STEM), but also on the historical origins and socio-cultural dimensions of these challenges. The history of the past century provides many examples where the potential of STEM research outcomes has been best realised by understanding the social context of its application. Given the growing scale of collaboration between STEM and humanities, arts and social sciences research communities (the HASS sector), it would seem logical to establish a capability area, or high-level entity, specifically charged with identifying infrastructure priorities necessary for innovative STEM / HASS research collaborations.

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

The proposed character of governance is generally appropriate. However, consideration should be given to creating a specific entity charged with identifying and prioritising the infrastructural needs with the Understanding Culture and Communities capability (UCC). Researchers across the spectra of HASS disciplines have many needs in common. They also have needs shared by with other capability areas. However, the intellectual and methodological diversity of the HASS sector presents peculiar challenges in developing UCC priorities in respect of data creation, preservation and re-use. The extent of diversity also presents challenges in developing cost-effective analytical services and tools with wide applicability across the UCC.

A UCC capability governance entity would need to be as representative, as is practicable, of the HASS sector's many discrete, but often variously overlapping, disciplinary and interdisciplinary research communities. Moreover, such an entity would need to be led by HASS researchers with expertise in the creation of e-research resources, in partnership with digital information specialists in the galleries, libraries and museum sector (GLAM). It is the GLAM sector that has created and now provides the majority of digital resources enabling Australian-based world-class HASS research.

Without a governing entity along these lines there is a serious risk that UCC initiatives will not effectively meet the challenge of best serving the diverse needs and aspirations of 40% of Australia's university-based researchers. Since NCRIS's belated recognition of HASS e-infrastructural needs, there have been few infrastructure projects that have successfully addressed widely shared needs in the HASS sector.

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

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

International collaboration is obviously crucial for Australian-based researchers, if they are not only to generate new knowledge and insights into problems of global magnitude, but also enhance their capacity to address national and more localised problems (research at the University of Tasmania underscores this point: it is increasingly characterised by collaboration with researchers in comparable island societies producing mutually valuable research outcomes).

The possibility that requests for international access might entail prioritising resources at the expense of developing national facilities, provides additional grounds for creating a capability area, or high-level entity, specifically charged with identifying infrastructure priorities for STEM / HASS research collaboration. It is crucial to ensure that access to international facilities (which would very likely be mostly sought by STEM research communities for the foreseeable future) is balanced against UCC capability priorities, which are likely to be focused on enhancing HASS access and use of locally produced and curated data that is uniquely illustrative of Australian history, society and culture. For the capacity of Australian research communities to engage in international research collaborations is very often their ability to bring Australian perspectives to questions of global significance.

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

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

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

A steadily increasing number of Australian-based humanities researchers are involved in large scale international collaborative projects using large corpora of historical or socio-cultural data to address questions of global significance. Others are using analytical tools with 'big data' to pursue innovative research on questions of national interest. However, the ability of postgraduate and early career researchers to engage in collaborative e-research of international and national significance is subject to constraints.

These include factors peculiar to the culture of specific disciplines, as well as institutional perceptions of the humanities as having neither need nor interest in e-research infrastructure. However, one of the most significant constraints is the lack of a national program to support university-situated experts in digital humanities in providing postgraduate and early career researchers with e-research expertise and skills. This absence of support leaves localised efforts to 'skill-up' young humanities researchers dependent on what are often meagre institutional resources. It also puts training in e-research techniques at risk of being mis-aligned with key infrastructural developments.

We also need to plan for the researchers to come. What is required is a national strategy for providing opportunities for humanities undergraduates to gain basic expertise in fundamentals of e-research, so that they are able to exploit the opportunities for innovative research provided by national e-research infrastructure from day one of postgraduate research training. Devising and implementing such a strategy may be beyond the scope of NCRIS, but advocating a major initiative along these lines by personnel charged with the development of its capabilities is not.

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

The key principle should be recognition of the public good that flows from free and open access to knowledge. There will, of course, be situations in which access conditions must comply with privacy legislation. There will also be instances where restrictions in respect of Indigenous knowledge and culture will apply. However, there are well established ethical protocols for dealing with personal or culturally sensitive data in digital forms that can be applied to national infrastructure.

**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?**

A critical point to make here is that while HASS researchers are becoming increasingly reliant on digital data, there is a crucial difference between the STEM and HASS sectors. STEM researchers are generally the creators and ongoing users of data, which is curated in universities or specialist research facilities. HASS researchers mostly work with digital data created by international, national and local government agencies and other public entities, notably within the GLAM sector.

Hence the prime challenge for the UCC capability is to achieve the best alignment of digitisation programs of public entities (notably key government agencies, and the National and State Libraries) with HASS research communities.

The issues paper notes that, since the late 1990s, HASS researchers have created various remarkable project-based digital resources, many of which have been wholly or partly funded by the ARC, ANDS or Nectar. However, the unmet challenge is to integrate these projects to form a key element of national infrastructure through employing common information exchange standards and protocols with government entities and the GLAM sector. There have been attempts in this direction, but little

progress has been made. The stumbling block has been the lack of a governance entity that is representative of the diverse interests of HASS researchers by virtue of being led by HASS and GLAM personnel with expertise in the creation, dissemination and curation of e-research resources. Without such an entity, the risk is that significant investment will be made in services that do not address whole of UCC capability needs.

What also appears missing from the UCC capability is a clear commitment to strategic investment in the development of services and tools supporting the needs of HASS researchers in respect of data mining, semantic analysis, and the visual analysis of cultural complexity. Possibly these needs are envisaged as being addressed by the 'Underpinning Research' and 'Data for Research and Discoverability' capabilities. However, the fundamental importance of the above services and tools for HASS researchers cannot be under-estimated.

Given HASS needs and the diversity of the sector, what is needed is not just a governance entity for the UCC capability, but a national facility charged with practically managing the co-ordination of GLAM and HASS digital initiatives, as well as the development of national protocols and standards for the creation, sharing and re-use of historical and socio-cultural materials in digital forms.

**Question 25: Are there any international research infrastructure collaborations or emerging projects that Australia should engage in over the next ten years and beyond?**

There are two international infrastructural developments with which the UCC capability would do well to closely collaborate. The first is Europeana, which provides a model for key aspects of managing, disseminating and analysing culturally complex data. Europeana also contains a wealth of data relating to Australia of great relevance to HASS researchers. The second is the Digital Library of America / Stanford University partnership. This collaboration aims to develop tools for the discovery and analysis of big data of historical and socio-cultural significance curated within a wide range of international and national repositories.

**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?**

To rehearse the observation made in response to Question 24, serious consideration should be given to establishing a national facility charged with practically managing the co-ordination of GLAM and HASS digital initiatives, as well as the development of national protocols and standards for the creation, sharing and re-use of historical and socio-cultural materials in digital forms. Otherwise there is too great a risk that initiatives will not take a whole of capability approach to benefit as many HASS researchers as is practicable.