

Delivering Digital Services for a National Research Network: Lessons and Implications for E-Research in the Humanities

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INTRODUCTION

The Australian Research Council's Network for Early European Research (NEER) is approaching the end of its five-year funded life (2004-2009). One of its central programmes has involved building a suite of digital services, including a collaboration environment, a discipline-specific repository of research outputs, and a specialized resource discovery service. In this paper, we look at some of the lessons learnt from this process, assess the options for the future of these services, and consider some general implications for e-research and the humanities.

THE NETWORK'S DIGITAL SERVICES

The digital services developed by NEER have focused on three main areas: communication and collaboration, research outputs, and research objects. The first has involved the creation of Web-based spaces and tools for communicating, collaborating, promoting and keeping a record of activities and decisions. As well as supporting spaces for personal and individual use, this service has provided a range of group spaces – especially for the Research Clusters which have been at the heart of NEER's collaborative research activities. This service has been essential in helping to unify a national project which would otherwise be fragmentary and dispersed (particularly if it relied solely on e-mail for communication). The Confluence software has performed these functions very successfully.

The second major area is a Web repository which showcases and promotes publications and other research outputs by members of the Network. It will also serve as an enduring record of these research results. The repository may, in part, be virtual (i.e., assembled from links to university repositories), but the initial focus is on the storage of digital and digitized objects. NEER is using the DigiTool software for the repository (under the name *PioNEER*), but DigiTool's future life as a commercial product appears to be limited, and NEER may need to plan for migration to a different system.

NEER's third area of digital services focuses on research objects: medieval manuscripts and early modern artworks and museum objects held in Australian collections. *Europa Inventa* is a resource discovery service which provides searchable and browsable access to metadata about more than 1,700 of these items, in a PostgreSQL database. While the database records may contain pointers to already-digitized versions of these objects, NEER itself has been unable to fund any digitization and is reliant on the digitization programmes of the libraries, galleries and museums concerned. This is the first time that information about all these types of objects has been brought together in a single place, to give a researcher-oriented view of the disparate materials relevant to Early European research. This is only a first stage; *Europa Inventa* has the potential to form part of a global framework for research on such objects, with an environment for their annotation, manipulation and visualization.

INSTITUTIONAL I.T. ENVIRONMENTS

The Network's administrative staff are located in one of the Schools within the Faculty of Arts, Humanities and Social Sciences at the University of Western Australia. While basic computing support is provided by the Faculty's Computing Service as part of the University's in-kind support, support for the establishment of the Network's major digital services has had to be negotiated across the University. The Network has not established its own autonomous digital infrastructure. The collaboration and resource discovery services have been hosted by the Arts Faculty, while the research repository is being hosted by the Library. Each group has had rather different policies and approaches for software selection, support and maintenance, and charging. The Network's projects have had to find their place within the already over-loaded schedules of projects being managed by each group.

The Network's existence has also coincided with a period of considerable change in the University's I.T. environment. The previously largely decentralized management structure has begun to change, particularly in the distribution of staff and responsibilities between the University Library and the central Information Technology Services (ITS). This has particularly affected the way in which the PioNEER service is being supported and implemented.

TAKE-UP BY THE RESEARCH COMMUNITY

More than 350 individual researchers have registered as participants in the Research Network. The early adopters of Confluence have tended to be those members of this research community who have the most to gain from promoting their work. Postdoctoral and early career researchers have been particularly active, together with postgraduates and younger academics generally. The other main area of use has been among those researchers who are working in small groups and who need a national or international method of communication which is private and more sophisticated than

e-mail. These groups have included teams putting together grant applications or implementing collaborative projects, assembling volumes of essays for publication, or managing aspects of the Network's finances and programmes. The Network has also been able to involve industry and community partners more closely through their participation in these kinds of social spaces.

EXPECTATIONS OF KEY STAKEHOLDERS

Innovative technology platforms were integral to the success of the NEER application. Senior research managers in universities and government agencies alike increasingly expect this kind of technology to be deployed by large-scale projects, and regard this as an integral part of the innovation process. Managing the expectations of key decision-makers within the Network itself, however, was far from straightforward. A significant issue was the order in which the digital services were to be implemented. Not everyone agreed that the collaborative environment should be implemented first; the resource discovery service was initially more appealing and better understood as a concept. There was comparatively little understanding of the level of complexity involved in decisions about software platforms, sources of institutional support and adherence to international best practice, as well as a lack of awareness of the significant level of resources and time required to develop such ambitious technological services.

THE BROADER DIGITAL AND RESEARCH LANDSCAPE

NEER's research agenda is an inherently global one, and collaboration with European and North American projects and programmes has been vigorously pursued. The digital services have also developed a global outlook, particularly through contact with a range of European projects and by involvement in European proposals for new approaches to the delivery of a digital environment for medieval manuscript research. An important vehicle for this has been CARMEN (Cooperative for the Advancement of Research through a Medieval European Network), the main European collaborative body in this field. CARMEN has an active manuscript research group which includes the major European libraries. In 2009, NEER and CARMEN jointly hosted a European Science Foundation workshop on the application of Semantic Web technologies to medieval manuscript research. This has resulted in a Road Map for a future technological framework in this area.

LIFE AFTER ARC FUNDING

Though the initial ARC funding period is nearing its conclusion, the Network has been actively seeking other sources of support for some time. The digital services are one of the two NEER programmes which have been earmarked for continuation after the ARC funding period – the other being the national postgraduate training workshops. Further grants are being sought from a range of Australian and international sources, and negotiations are well-advanced with the University of Western Australia and the Australian and New Zealand Association of Medieval and Early Modern Studies (ANZAMEMS) for a combination of institutional and professional association support. NEER's digital services are regarded as essential infrastructure for this national research community, and their maintenance and further development are seen as a high priority. Like so many projects, though, the transition to a continuing existence is proving somewhat difficult and uncertain.

E-RESEARCH IN THE HUMANITIES

The term "e-research" tends to be used quite loosely in relation to the humanities – often to mean no more than digital Web-based services. "E-science", on the other hand, means something much more specific: where data are collected, stored and manipulated exclusively in digital form and where research processes take place "in silico". The transformative effect of this approach in several scientific fields is increasingly evident. While NEER's digital services – particularly Confluence – have undoubtedly started to change the way in which research is done in the field of Early European studies, they are a long way from being transformative in the full sense of e-science or e-research.

What needs to be done in order to build a digital environment which is closer to e-research? Clearly the different services need to be linked and integrated more closely, but within an overall model of humanities research processes. E-research models and services are based on the assumption that there is a body of digital research data to which analytical tools can be applied. But it is difficult to come up with a sufficiently neat definition of "research data" in the humanities or to model the variety of research processes which are employed. The new semantic frameworks of the "data-centred Web" (superseding the "document-centred Web") appear to hold a great deal of promise for the humanities, as long as we can define a sufficiently inclusive and unambiguous approach to the nature of humanities data and to the modeling of the analytical processes involved in humanities research.