

Towards a national infrastructure for access to Australia's documentary information resources in electronic formats: strategic developments at the National Library of Australia

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Abstract:

The National Library of Australia is undertaking a wide range of practical and research activities to facilitate the tasks of collecting, preserving and making available Australian electronic resources, and is collaborating with other institutions in endeavours which advance these aims. The objective is to ensure that these resources are accessible by both current and future generations of Australians. This paper outlines the National Library's strategies and key activities with regard to Australian electronic resources, and highlights key technical challenges to be overcome.

Introduction

The National Library has an ambitious goal, as outlined in its strategic directions statement, *Directions for 2000-2002* (<http://www.nla.gov.au/library/directions.html>). The goal is to provide all Australians, at their place of choice – whether from home, school, university, workplace, or their local library – with access to information about both the National Library's and the nation's resources, and as far as possible to provide online access directly to the content they are seeking.

The National Library believes that the collecting, creation, management and delivery of Australian electronic resources can best be achieved through working towards a national infrastructure in cooperation with related organisations such as State libraries. Australian documentary information in electronic form is also held by a range of organisations within the general cultural sector – museums, archives, galleries, local history organisations – creating a challenge of cooperation across traditional sectors in the interests of providing integrated Web-based access to a wide range of electronic information sources.

The Web and other developments in the online environment have provided new means of distributing information nationally and internationally. The physical barriers to the use of collections of Australian library materials, which include many unique or rare items, are breaking down as selected collection materials can be made available in digital format to a user wherever they are located and at whatever time is convenient. Libraries managing Australian documentary information resources need to position themselves as important players in the online information industry, both in terms of facilitating access to electronic information resources and creating and managing content. Information users are increasingly expecting to find information online and the provision of Australian digital content held and managed by libraries can meet these user requirements.

In order to move towards the goal of 'seamless access' the National Library has developed an *Electronic Information Resources Strategies and Action Plan 2001-2002* (<http://www.nla.gov.au/policy/electronic/resourcesplan.html>). This plan is both a public statement of key strategies and current priorities, as well as a working document to be updated annually. The plan addresses four key issues – collecting; preservation; access; and support for resource sharing. The plan refers to the National Library's approach to both Australian and overseas electronic information resources. This paper concentrates on Australian electronic information resources.

Electronic Information Resources Strategies and Action Plan 2001-2002

In formulating its thinking in this area, the National Library has made several assumptions about the medium-term environment in which libraries are operating:

- *Users of Web resources will increasingly access electronic information resources without the intermediation of libraries.*
- *Commercialisation of the Web will continue – however, there will continue to be an expectation from users that access to information will remain free or at a low cost.*

- *Collaboration will assume greater strategic importance as a way of achieving similar goals across different sectors, forcing traditional information service providers to forge innovative alliances.*
- *Portals and other interfaces to information will be developed by a range of organisations, serving the needs of defined communities.*
- *Electronic resources made available through the Web will be better indexed, as search engines become more metadata aware and more efficient.*
- *Intellectual property and copyright issues will become increasingly important and will lead to closer alliances between rights owners, publishers, vendors and libraries.*
- *Libraries will continue to distinguish between core services which will remain free in order to serve the public good and value-added services for which a charge may be appropriate.*
- *Software will emerge to support new ways of doing business, such as authentication software to support e-commerce and other services requiring high levels of security.*
- *Governments will continue to support general community access to the Web, through the provision of funding for technology and equipment to ensure that particular groups within the community do not become information poor – issues of information literacy and access to basic sets of information will also be addressed. Many government services will be provided online and much government information will be made available online.*

The Library also recognises that there is a wide range of business and technical challenges that must be met if the existing national infrastructure supporting collecting, preservation, access to and delivery of information resources is to be successfully extended to encompass electronic information resources. The business challenges relate to the Library's national role, but stakeholders in the national infrastructure will influence their direction. The challenges include:

- *Being responsive to the needs of our clientele (from those who think that libraries no longer need to be visited as everything is available with a single click on the desktop to those who still rely on obtaining their information via a physical visit to the library) in an environment where electronic information resources and digital reference are becoming the norm.*
- *Developing new products and services that exploit the electronic environment and that take advantage of convergence across the cultural sector and beyond.*
- *Reviewing existing products and services to ensure their ongoing relevance in the electronic environment, for example, the Australian National Bibliography.*
- *Ensuring that resources are available both to continue core functions and to engage in research and development of new products and services, for example PictureAustralia.*
- *Developing new partnerships both within and beyond the library and cultural sectors.*

The technical challenges are common to libraries and other heritage and information providers nationally and internationally. The Library in its national leadership role is well placed to influence the development of international standards, and to work with others to ensure that interoperability between systems and across sectors is viable. This role includes:

- *Gaining experience with improved metadata harvesting techniques to support resource discovery services (for example, using the Metadata Harvesting Protocol developed by the Open Archives Initiative);*
- *Gaining an improved understanding of data models which support access to information resources across the library, museum and archive domains;*
- *Gaining experience with alternatives or improvements to the Z39.50 standard in order to support improved distributed resource discovery;*
- *Piloting the implementation of standards-based rights management systems;*
- *Supporting resource discovery at the work and expression level (for example, this may be addressed in MusicAustralia, which may build on the experience of the AUSTLIT Project);*
- *Supporting resource discovery for manuscript and other collections in a manner which integrates finding aids with collection-level descriptions (for example, in enhancing RAAM as a national resource discovery service);*
- *Addressing the need for whole-of-domain capture as a supplementary digital preservation strategy;*
- *Collaborating with other organisations to share information on techniques for managing digital resources in formats which are in danger of obsolescence; and*
- *Actively contributing to the development of international standards that will underpin interoperability, for example the role currently being played by the Library in the development of an international standard for preservation metadata.*

Collecting

The National Library's key objective in terms of its collecting role is:

'To ensure that a comprehensive record of Australian history and creative endeavour, and a selected record of universal human knowledge is collected and cared for'
Directions 2000 – 2002

The National Library took on the practical challenge of collecting Australian publications in online electronic format at an early stage in 1995. The decision to move quickly was based on the need to ensure that important Web-based information was captured as part of the overall documentary heritage.

The thinking and developmental work underpinning the PANDORA (Preserving and Accessing Networked Documentary Resources of Australia) Archive (<http://pandora.nla.gov.au/>) has recognised that it is neither possible nor desirable for the National Library to attempt to collect and preserve all of Australia's documentary heritage in online form on its own. Accordingly, the National Library is developing a collaborative, national framework to achieve a national collection of significant Australian electronic information resources. Partner organisations include the State Libraries, ScreenSound Australia and any other interested organisations.

In 2001-2002 the National Library is undertaking the following activities:

- *Implementation of a digital publications management system (PANdora Digital Archiving System (Pandas)) to control and record data related to the collection of online Australian publications. Pandas has been designed deliberately as a distributed archiving system with web access to all functions, to facilitate its use by partner organisations.*
- *Formalise collecting and archiving agreements with the state libraries, including the development in collaboration with the Council of Australian State Librarians (CASL), of a selection guidelines template for partners to use when identifying electronic information resources for national preservation.*
- *Development in collaboration with the State Library of Tasmania and on behalf of CASL of a national persistent identification scheme for electronic information resources. The scheme, to be known as the Australian Digital Resource Identifier (ADRI), will provide a guide for organisations to name their resources in a way that will ensure continued access to these resources in the future.*
- *Investigation of the feasibility of taking regular snapshots of the entire Australian Internet domain, including storage and access issues (in order to complement the selective approach to preserving Australian electronic information resources used in PANDORA).*
- *Work with the National Archives of Australia to influence government agencies to adopt best practice in publishing and managing their electronic information resources, and to promote the role of the two organisations in the collection and management of government records and publications created in electronic format.*

At the same time as this work is being undertaken, the issue of the extension of Commonwealth legal deposit provisions to cover electronic information resources is being pursued by the National Library and ScreenSound Australia. While waiting for the issue of extending legal deposit to be resolved, the National Library is undertaking the following activities with a view to improving access to Australian Government publishing in electronic form:

- *Working with Commonwealth Government agencies to progress the issue of the extension of legal deposit for the collection of Australian electronic information resources.*
- *In anticipation of the extension of Commonwealth legal deposit legislation to cover electronic information resources, work with Australian publishers to develop an agreed set of principles to address deposit and access issues in relation to commercial electronic information resources.*
- *Seek a 'blanket permission' agreement from the Attorney-General's Department for the Library to collect and archive Commonwealth Government publications in online electronic format.*

Preservation

The National Library's key objective in terms of its preservation role is:

'To preserve and maintain all Australian and significant non-Australian library materials to ensure they are available for current and future use'

Directions 2000 – 2002

The collecting of Australian electronic information resources has involved a strong commitment by the National Library to the development of preservation principles and techniques to ensure that as far as possible these resources will be available for access in the long-term. The challenges facing the Library include managing the technical issues such as hardware and software obsolescence, finding cost-effective and affordable processes, maintaining the skills base required to work in a complex and rapidly changing area and convincing a wide range of institutions to accept responsibility for aspects of the preservation of their own electronic information resources.

The National Library is providing leadership to other Australian libraries and agencies that are taking responsibility for the preservation of electronic information resources. It is doing this in a variety of ways, including the development of policy and guidelines, as well as undertaking experimentation with new preservation techniques at a practical level. An example of this is the recent publication by the National Library of a series of guidelines to assist creators of electronic information resources to publish in a manner that will assist libraries with the long-term preservation of their publications. *Safeguarding Australia's Web Resources* (<http://www.nla.gov.au/guidelines/2000/webresources.html>) and *Managing Web Resources for Persistent Access* (<http://www.nla.gov.au/guidelines/2000/persistence.html>) are two of these. The National Library is also working collaboratively on behalf of the Australian library sector, with other national libraries and overseas organisations to develop standards and preservation techniques for electronic information resources. The PADI (Preserving Access to Digital Information) web-site (<http://www.nla.gov.au/padi/>), hosted by the Library, is a subject gateway to the latest developments in electronic preservation and a forum for discussion between institutions working in this area.

The key to developing successful models of digital preservation lies in shared responsibility. While the Library has a strong partnership base with other repository institutions such as the State libraries and ScreenSound Australia, it is important that partnerships with the academic and publishing sectors are also explored. While the models may differ from partnerships with repository institutions, it is essential that responsibility for digital preservation be taken up by other sectors. This may take any form – from commitment to the use of particular standards to ensure longevity of electronic information resources, to commitment to medium or long-term archiving responsibilities.

The National Library is giving priority to the following activities during 2001-2002:

- *Developing a Digital Preservation Policy, which will indicate the directions, the Library intends to take in preserving its own electronic information resources, and in collaborating with others to maximise the effectiveness of digital preservation activities.*

- *Investigating the feasibility of establishing a repository for obsolete versions of software as a short-term strategy for providing continuing access to online electronic information resources while longer-term options are being pursued.*
- *Testing media transfer, migration, emulation, data recovery and other methods of maintaining access to electronic information resources (for example, emulation of obsolete DOS operating systems, migration of dead html tags).*
- *Contributing to the development of an international standard for a set of preservation metadata for electronic information resources, in collaboration with the Research Libraries Group (RLG) and OCLC.*
- *Contributing to the development of international best practice including actively supporting the work of the RLG/OCLC Attributes of Digital Repositories Working Group and the Conference of Directors of National Libraries (CDNL) Working Group on Digital Issues.*

Access

The National Library's key objective in terms of its information access role is:

'To ensure that the Library provides effective and open access to its own collections, and to information sources elsewhere'

Directions 2000 – 2002

Access is the rationale for the National Library's collecting and preservation activities. The National Library is contributing to the development of a national infrastructure to support access to electronic resources by supporting a range of projects being led by other institutions, as well as leading in the development of new Web-based business models such as PictureAustralia (<http://www.pictureaustralia.org>) which aim to offer access at a national level to key electronic information resources.

The National Library is also undertaking major projects, such as its digitisation of large numbers of original Australian collection materials (including pictures, sheet music, maps, manuscripts and sound), which may form the basis of collaborative efforts to improve access to particular formats of material.

In 2001-2002 the National Library intends to undertake a range of activities to improve access to electronic information resources:

- *Develop in collaboration with the State Library of Tasmania and on behalf of CASL, a set of guidelines to be used when creating the descriptions of resource discovery elements in metadata sets. These guidelines will be designed for use with any metadata set used by Australians.*
- *Collaborate with other institutions in the development of delivery systems that enable Australians to have improved access to electronic information resources, for example the Australian Academic Research Library Information Network (AARLIN) portal project (<http://www.latrobe.edu.au/arlin/>) and AUSTLIT: The Australian Literary Database (<http://www.lib.adfa.oz.au/>).*
- *Undertake a feasibility study to determine the need for a MusicAustralia portal which will provide a single entry point to a number of music services, including digitised*

sheet music linked to sound held in the collections of a range of cultural institutions, and directory services.

- *Undertake a feasibility study to test the business and technical issues associated with the development of a repository for the resource discovery of Australian electronic information resources and develop a proof-of concept repository based on the outcome of the feasibility study.*

Support for Sharing Electronic Information Resources

The National Library's key objective in terms of support for the Australian library system is:

'To ensure that Australians, wherever they live or work, have access to information resources in Australia and overseas'

Directions 2000 – 2002

The National Library is committed to ongoing support of collaborative services and systems, which provide access to print and electronic information resources. Several major national resource sharing services are already in place and opportunities for improving their coverage, functionality and usability will continue to be pursued. These services include the National Bibliographic Database (NBD); the Australian Libraries Gateway (ALG) (<http://www.nla.gov.au/libraries/>) which incorporates the Interlibrary Resource Sharing Directory (<http://www.nla.gov.au/ilrs/>); and the Register of Australian Archives and Manuscripts (RAAM) (<http://www.nla.gov.au/raam/>).

Priorities for 2001-2002 are:

- *Collaboration with partners in the library and other sectors to develop and host information and directory services that include electronic information resources. This includes activities such as extending RAAM to enable access to electronic finding aids; increasing the number and diversity of participants in PictureAustralia; and providing support for the coordination of Australian subject gateways to facilitate the sharing of expertise and standards.*
- *Facilitate- reporting to the NBD by Kinetica customers of their holdings of electronic information resources. This includes provision of a link checking service to encourage maintenance of holdings; development of a simple web-based form for reporting resources to Kinetica; and development of guidelines for the reporting and managing of holdings of electronic information resources.*
- *Collaboration with State, Territory and public libraries on consortia acquisition of a selection of full text electronic resources, with the aim of ensuring that all Australians have access to a minimum set of electronic information resources. The consortium has already negotiated access to a number of resources (<http://www.caslconsortium.org>).*

Conclusion

The collection, preservation, and provision of access to Australian electronic information resources is a key role for the National Library of Australia. This is being undertaken in collaboration with related Australian libraries and other organisations with an interest in this area. The technical challenges are considerable and are likely to be solved through ongoing international collaboration. The National Library will continue to provide up-to-date information on its strategies and actions in this area and will continue to seek partnerships with interested organisations in the interests of improving the overall level of access to Australian electronic information resources.

Documents and sites cited

AUSTLIT: The Australian Literary Database (<http://www.lib.adfa.oz.au/>)

Australian Academic Research Library Information Network (AARLIN) portal project (<http://www.latrobe.edu.au/arlin/>)

Australian Libraries Gateway (ALG) (<http://www.nla.gov.au/libraries/>)

CASL Consortium web site (<http://www.caslconsortium.org>)

Interlibrary Resource Sharing Directory (<http://www.nla.gov.au/ilrs/>)

National Bibliographic Database (NBD)
(<http://www.nla.gov.au/kinetica/databases.html#nbd>)

National Library of Australia. *Directions for 2000-2002*
(<http://www.nla.gov.au/library/directions.html>)

National Library of Australia. *Electronic Information Resources Strategies and Action Plan 2001-2002* (<http://www.nla.gov.au/policy/electronic/resourcesplan.html>)

National Library of Australia. *Managing Web Resources for Persistent Access*
(<http://www.nla.gov.au/guidelines/2000/persistence.html>)

National Library of Australia. *Safeguarding Australia's Web Resources*
(<http://www.nla.gov.au/guidelines/2000/webresources.html>)

PADI (Preserving Access to Digital Information) (<http://www.nla.gov.au/padi/>)

PANDORA (Preserving and Accessing Networked Documentary Resources of Australia) Archive (<http://pandora.nla.gov.au/>)

PictureAustralia (<http://www.pictureaustralia.org>)

Register of Australian Archives and Manuscripts (RAAM) (<http://www.nla.gov.au/raam/>)