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Breaking Down the Barriers: New Directions for the National Library of Australia

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Introduction

For the National Library of Australia, located in Canberra, with a small population of 350,000 and hundreds of kilometres from the main population centres of Sydney and Melbourne, the ability to provide access to our collections and services online to all Australians offers us the opportunity to become truly national for the first time. Australia is a big country – 7,700,000 square kilometres – with a small population – 19,000,000 million. While three quarters of the population live in one of the seven state and territory capital cities, five million people remain widely scattered in smaller rural and regional communities. The World Wide Web and other developments in the online environment have provided us with the opportunity to develop services that can take our collections into the homes of all Australians. The physical barriers to the use of collections, including heritage collections which traditionally hold rare and unique materials, are disappearing.

*When senior staff at the National Library of Australia began discussions to revise the strategic directions statement that would serve as a declaration of our priorities for the next three years (2003-2005), there was unanimous agreement on one particular point: that we must make it as easy as possible for our users to find and to access the wide range of information resources that are available to them. This is reflected in the key goal in the Library's most important public statement *Directions for 2003 – 2005* (www.nla.gov.au/library/directions/html)*

“Our major undertaking in 2003 – 2005 will be to provide rapid and easy access to the wealth of information resources that reside in libraries and other cultural institutions – and to break down the barriers that work against this.”

Background

In developing its strategic directions statement, the Library has taken into consideration the following environmental factors¹:

- Users will increasingly seek information online from their home, workplace or place of study and they will not care about who holds this information but rather they will want easy and fast access to information regardless of the source
- Users will increasingly access information resources without intermediation by librarians
- Search engines will provide more efficient search capabilities, allowing users to locate required information more easily and with greater precision
- Collaboration will assume more strategic importance as a way of achieving similar goals across different sectors, and traditional information providers will align themselves in new and innovative ways
- Commercialisation of the Web will continue, particularly in relation to traditional business activities. However, users will still expect most information services to be either free or provided at very low cost
- Virtual reference services will become more prevalent and more sophisticated, reflecting the shift to the use of the Web as a primary information source for many users

The Library is responding to the changing environment and the challenge of meeting user expectations of increased access to online information by developing new programs and services aimed at achieving the following:

- Maintaining a balance between meeting long-term objectives, such as developing and maintaining the collections, while also undertaking research and development in order to provide new programs and services to meet the changing needs of our users
- Collaborating with other Australian cultural institutions to develop national online services for users
- Developing services that facilitate direct end user access to information, and where possible, access to online information
- Designing these services so that they are simple and easy to use and can be accessed by anyone with an Internet connection and a standard PC

¹ National Library of Australia “Electronic Information Resources Strategies and Action Plan 2002-2003”
<www.nla.gov.au/policy/electronic/resourcesplanindex.html>

- Providing gratis access to online services whenever possible to support equity of access to information and to encourage use by all potential user groups - researchers, students, teachers, family historians, writers, publishers

There is a strong emphasis on collaboration in the Library's strategic statement and this reflects a significant aspect of the Library's approach to making it easy for users to find and access information resources at the national level.

“Cooperate with other libraries, cultural institutions and creators of information to ensure a wide and culturally diverse range of material is available to the Australian community”

Directions for 2003-2005

The Library recognises that many users seeking information online do not care who holds that information. Through the Internet people are accustomed to searching an amorphous body of data that yields information from diverse sources. In this environment, it makes good sense for the National Library to collaborate with other Australian cultural institutions in the development and delivery of simple, easy to use aggregated online services to users.

Working collaboratively not only ensures that Australians have the best possible access to the nation's information resources but allows the participating institutions to share costs and expertise. The National Library of Australia is well placed to develop collaborative services because of its long history of cooperation and resource sharing with the Australian library sector and its strong leadership role in the development of key elements of national infrastructure to support the delivery of information resources to the Australian public.

At the core of this activity is the National Bibliographic Database (NBD), which has been developed and managed by the Library since 1981. The NBD acts as an Australian union catalogue with over 33 million holdings for items held by Australian libraries and underpins the national inter-library loan network. More recently, the Library has worked with other libraries to extend the concept of resource sharing among Australian libraries to include electronic resources and to link users directly to content. In developing initiatives and services the Library has, in particular, been able to rely on the long standing relationship with the State libraries who share the responsibility for collecting, preserving and providing access to Australian documentary heritage.

Specific activities that are aimed at achieving the Library's goals of working collaboratively with others to ensure access to information at the national level include:

- Collaborating with other institutions to achieve a national collection of archived Australian electronic information resources
- Digitising a wide range of Australian items in the Library's collection that would otherwise only be able to be used by those visiting the Library in person, including pictures, maps, manuscripts and sound recordings
- Developing delivery services for these digitised materials so that users can easily find items through the catalogue or other service points, and access these materials, for

example, navigate within manuscript collections and examine detailed aspects of maps using zooming technology

- Consortia licensing of electronic datasets to provide direct access to electronic journals and other information that is commercially available
- Developing services that provide convenient aggregated search access to online content held by the Library and other organizations
- Developing digital reference services that support users regardless of their location

Web based resource discovery services

*“develop and improve free web-based discovery services, including services which integrate access to the collections of collaborating Australian institutions”
Directions for 2003-2005*

The Library is proactively extending the concept of resource sharing beyond the library sector. This is reflected in the development of several new services that offer a single search interface to the aggregated collections of a diverse range of institutions. PictureAustralia, MusicAustralia and AustraliaDancing are recent examples of the Library’s initiatives in this area.

PictureAustralia (www.pictureaustralia.org)

The PictureAustralia service is designed to provide users with a single search interface to all digitised images relating to Australia. The principles on which the service is based reflects those things that the National Library of Australia believes are important in bringing information within reach of all Australians. The service extends across the cultural sector with the thirty current participants contributing images spanning libraries, archives, museums and galleries and representing both small and large collections. There is a waiting list to join the service as institutions recognise both the benefits of being part of such a service and the fact that the National Library of Australia has demonstrated its willingness to develop and promote the service to a high level.

While the service aims to provide users with a very simple search interface, the Library has also designed the service so that minimal requirements are imposed on participating institutions. This ensures that small institutions that lack information technology support are able to join the service. The Library harvests Dublin Core metadata from participants who are only required to supply a title field (although most supply much more than this), assists participants to convert records in other formats to Dublin Core and provides advice on a wide range of information technology and standards issues. The Library hosts the metadata in an index which is searched by users. Images remain on the participant’s websites and thumbnail versions are gathered in real time and incorporated into search results sets.

It is envisaged that images held by institutions outside the cultural sector will also be included in PictureAustralia. An example of this is the images held by the Commonwealth (of Australia) Scientific and Industrial Research Organisation (CSIRO) which has a large number of significant images relating to their research activities. PictureAustralia is also expanding to include Australian images held by overseas institutions and both the National Library of New

Zealand through the Timeframes image service and the Scottish Cultural Resources Archival Network (SCRAN) contribute to the service.

The decision to develop PictureAustralia as a cross-sectoral service reflects the need to deliver services to suit changing user behaviour, particularly the growing number of users who rely on a broad ‘search engine’ approach to finding information. A search of PictureAustralia does in fact reveal that institutions hold images that a user would not anticipate and this is one of the strengths of the service. For example, a search on the Sydney Opera House reveals that archives, galleries and libraries all hold relevant images. Access to the service is free, although users wanting high quality images for use in commercial or other ways must order directly from the institution that hosts the image and a fee is usually charged for this, depending on the policy of the institution. Free access, combined with the fact that there are no special software or hardware requirements for use, ensures that the service is generally accessible to the community.

While users benefit from simple searching of a wide range of images at a single search point, participating institutions experience increased use of their collections from a wider diversity of users, and are able to share information and ideas relating to image digitisation with each other. At present 620,000 images are available through PictureAustralia with new images being added each month. The service is used by about 45,000 people per month, resulting in an average of 1.7 million hits per month.

The PictureAustralia model has been very successful in the Australian context and has been adapted by the National Library of Canada in their development of Images Canada (www.imagescanada.ca) and the National Library of New Zealand in PictureAotearoa (www.natlib.govt.nz).

MusicAustralia (www.musicaustralia.org)

Following the success of the PictureAustralia model, the Library has embarked on the development of a new service called MusicAustralia. While MusicAustralia emulates the concept of a single search across aggregated resources held by a wide range of institutions, the library is facing far greater challenges and complexities in developing a service that allows users to interact with the material they find. In its project phase the Library is collaborating with ScreenSound Australia, the National Film and Sound Archive (www.screensound.gov.au), which has responsibility for collecting, preserving and providing access to Australia’s film and sound heritage. The MusicAustralia service will, in its first phase, offer access to the music and music related materials of the National Library of Australia, ScreenSound Australia and several other participating institutions via a single web interface. These materials will include printed scores, sound recordings, manuscripts, texts, images, moving images and web sites.

However, the MusicAustralia service will offer other services in addition to the search interface and in its second phase will develop a directory of individuals and organizations associated with Australian music. Each of these will have its own record including biographical details or historical notes, pathways to music or music related materials and descriptions of music related services offered by the individual or organisation. Entries in the directory will interact with other services offered by the National Library such as PictureAustralia, by linking to images in this service. It is envisaged that the service will offer interactive opportunities by allowing users to participate in music related activities such as

self-publishing and archiving, and will support new applications in music information retrieval and analysis.

A pilot service has been developed using one hundred and seventy sample digital music items. These items were selected to allow users to explore the relationships between printed and performed music materials held by different institutions, including:

- Digitised sheet music and digitised audio from folklore recordings held by the National Library
- Digitised heritage audio recordings held by ScreenSound Australia
- Several born digital music scores, text items and digitised audio recordings held by the Australian Music Centre (www.amcoz.com.au)
- Digitised audio recordings from an Australia Council contemporary music initiative, Australian Music Online (www.amo.org.au)

The pilot service demonstrates the ways in which users can access musical objects online. Users can:

- Simultaneously view a piece of digitised sheet music being delivered from the National Library of Australia's server, while listening to one or more digitised recordings of the same work being delivered from the ScreenSound Australia server, or from the National Library's server
- Navigate between related music materials, including multiple printed editions and versions of musical works
- Manipulate contemporary born digital music scores, which are produced by composers using music notation softwares
- Simultaneously view the score and listen to a simple sound file; or simultaneously view the score and listen to a performance audio recording, or interact with the score by changing the tempo or the key signature for practice and performance purposes
- View a small sample of music multimedia presentations, where digital print music and related digitised audio recordings are synchronised to allow even non-music literate users to follow the sheet music in time with the audio

AustraliaDancing (www.australiadancing.org)

The AustraliaDancing portal, hosted by the National Library, provides users with access to both current and historical information about dance in Australia. It is an initiative of the Library, which holds the largest collection of dance materials in Australia, in partnership with other collecting institutions and the peak industry and advocacy body for dance in Australia, Ausdance (<http://ausdance.org.au>). The aim of the service is to make Australian dance resources accessible both nationally and internationally, through a directory service. The portal is based on the work done on a static web directory of dance resources developed with

Australia Council funding by the Library, ScreenSound Australia and Ausdance between 1997-2001.

In 2002, the Library in further collaboration with Ausdance, redeveloped the directory into a dynamic database, providing direct links from entries to other relevant content available online, such as images from PictureAustralia and resources from the Library's PANDORA archive of online Australian publications, as well as finding aids and lists of captions to pictorial and ephemera collections of dance materials. A typical directory entry in AustraliaDancing will contain a biographical note or history, and a list of resources associated with a person, company or work. The list of resources will span all formats including pictures, oral histories, manuscripts, books, journals, films, audio recordings, digitised and born digital resources.

AustraliaDancing reflects the Library's desire to improve direct end-user access to information at the national level, and where possible to provide direct access to information in online form. AustraliaDancing currently receives 5,000 user visits a month, with half of these being from overseas, reflecting the international nature of dance.

Virtual reference services

“develop innovative and collaborative reference services using Internet technologies”
Directions 2003-2005

Reference services have evolved rapidly over the past few years in reaction to significant changes in the way that users want to access information. Many libraries have adopted email services in addition to the traditional phone, fax, letter and on-site requests. The National Library of Australia has been involved in the QuestionPoint collaborative email reference service piloted by the Library of Congress since its inception. However, users are now ready for real-time online reference services and the National Library of Australia is currently the project manager of a collaborative web based interactive reference service provided by the Library and the seven State and Territory libraries.

AskNow: Online Answers Australia Wide (www.asknow.gov.au)

A key feature of the chat reference service, AskNow which distinguishes it from the email reference services already offered by the participating libraries is that a user can ask a question and receive an answer immediately. The service is available via the Internet through the use of 24/7 chat software and can be used by anyone with a standard PC and Internet connection. The service operates from Monday to Friday from 9.00am to 8.00pm (55 hours per week), taking advantage of the different time zones across Australia. AskNow is an initiative of the Council of Australian State Libraries and reference staff from the National, State and Territory libraries are rostered for three 'seats' each session. Accordingly, when a user connects to the services they may have their questions answered by someone outside their home State or Territory.

The AskNow services allows a reference librarian to chat with the user online and to send web pages through to the user's computer screen. Users can be guided through a search as the user and librarian view the same web pages. Apart from the benefit of an immediate answer to a reference enquiry from off-site users, the service also enables the complete transcription of the librarian/user interaction to be emailed to the user at the end of the session together with

any web addresses which the librarian has provided during the course of the chat reference session.

One of the positive things to emerge so far from monitoring and evaluation of the service is that use of the service is coming from all over Australia and from all age groups. Forty per cent of users currently come from outside the major population centres. Many are unsure of the best way to search the Internet to find the information they need and by working through the search with a librarian users improve their own information literacy.

The Council of Australian State Libraries is exploring the possibility of extending participation in the service to selected public and university libraries, as well as other national libraries within the region. Through collaborating to bring about the AskNow service, each participant has been able to offer their users a new service and to provide an effective means of reaching off-site clients that would not be possible on their own. The nature of the service is also enabling participants to increase awareness nationally of their role and functions.

Facilitating virtual access to our collections

Digitisation of collections (www.nla.gov.au/digital/program.html)

“Digitise selected materials from the Library’s collections and assist users to access and explore, via the Internet, each type of collection material”

Directions for 2003-2005

The Library’s digitisation program is an important aspect of its goal to make our collections and services truly national. Digitisation of collections commenced in 1995 with the regular digitisation of current pictorial acquisitions, selected Australian journal articles and the conversion of oral history recordings from analogue to digital format. Newly created oral history is now routinely recorded in digital format. Digitisation of some other significant Australian materials was also undertaken on a project basis. In July 2001 the Library embarked on a major digitisation program in a deliberate effort to provide greater access to our Australian heritage collections. Materials to be digitised under this program included pictorial images acquired prior to the regular digitisation of pictorial materials, selected manuscript collections, rare maps and sheet music. Other formats, such as newspapers, are now under consideration.

Selection of material to be digitised is influenced by the following factors:

- Cultural significance and importance for research
- Ease of capture, determined by:

-copyright issues (does the Library own copyright; if not what is involved in copyright clearance)

-preservation issues (does the material require preservation work and if so how extensive is this; is there a benefit in creating a digital preservation version to reduce wear on the physical item)

-metadata issues (does the item already have cataloguing/captioning data)

-resource issues (does the Library have the expertise and equipment needed to digitise a certain type of material; is digitisation the most cost-effective option for example, would microfilming be more suitable)

- Support for new web based services (does this material support content for the Library's web based services, for example PictureAustralia; MusicAustralia; AustraliaDancing)

While there is no national digitisation program presently in place, the Library does undertake cooperative digitisation projects with other institutions if the projects meet the Library's digitisation objectives. One such project that the Library is currently engaged in is the digitisation of the papers of one of Australia's early Prime Ministers, Alfred Deakin. The National Library and Deakin University both hold relevant manuscript papers that are currently being digitised. These digitised papers will be able to be accessed via a single web site hosted by Deakin University (www.deakin.edu.au/alfredeakin).

The South Seas Project (www.nla.gov.au/southseas.gov.au) is another example of the Library's interest in collaborating with others to improve national access to information. This project is a collaboration between the Centre for Cross-Cultural Research at the Australian National University and the National Library. The project is investigating the opportunities provided by digital publishing to provide access to scholarly research via the web. The chief aims of the project are:

- To use web based multi-media to pursue new lines of research into Captain James Cook's first Pacific voyage (1768-1771) and to enhance understanding of cross-cultural encounters related to European voyaging in the Pacific.
- To develop editing standards for the preparation and delivery of historical documents in digital form, and software tools for management and production of digital scholarly editions.

Amongst other things the Library's involvement in the project includes the digitisation of a number of agreed historical works, design and hosting of the web site and development of content management standards and procedures and exploration of platform solutions. Once the initial project work is completed other cultural institutions in Australia and overseas will be invited to contribute resources to the web site.

Guides to the collections

“Provide a more specific level of access to some collections, including those in electronic form, by indexing or providing guides to them”

Directions for 2003-2005

The Library has continued to develop online subject guides that provide integrated access to print and electronic resources on a given topic or theme. The Library's digitisation program allows these guides to offer users direct access to digitised images and other items. A recent example of this is *Mura Gadi: A Guide to Manuscript, Pictorial and Oral History Materials*

Relating to Aboriginal and Torres Strait Islanders in the National Library of Australia (www.nla.gov.au/muragadi/index.htm). This guide has been developed with the specific aim of enhancing national awareness of and access to the Library's rich collections or resources relating to Aboriginal and Torres Strait Islander peoples.

As its title suggests, the guide provides information on resources in the Library's manuscript, pictorial and oral history collections. Amongst the many formats represented are letters, diaries and research files, interviews, folklore and social history recordings, drawings, paintings and photographs. A feature of the guide is the access to online resources. Entries in Mura Gadi are more extensive than library catalogue records and include biographical information, tribal names and contextual information.

Access to services via the website

“Restructure the web site so that its services better meet the needs of particular customer groups”

Directions for 2003-2005

The National Library of Australia's web site is the primary interface for the delivery of services to both on-site and off-site users. In order to ensure that this interface is meeting the needs of our users the Library commissioned an independent review of the usability of our public web site. The review, conducted in 2001, made a series of recommendations for improvements, many of which were minor and were able to be addressed immediately. Other recommendations dealing with issues such as the confusion caused for users by the Library's multiple catalogue interfaces, are currently being addressed through system enhancements and migration to a new integrated library management system. However, one of the major issues highlighted by the review – that users do not understand the distinction between a site search and the catalogue, or our collections and our merchandise – has led to the adoption of a new service model in order to more effectively meet users' needs.

Adopting the model has meant a major restructure and redesign of the web site to enable the existing separate catalogue and site search links to be replaced with a One Search service. The One Search facility will return search results from the catalogue, aggregated services such as PictureAustralia and MusicAustralia, and information on the Library's web site (including directories, guides, finding aids and the Library's Online Shop). By simplifying the number of user interfaces and moving the point at which users have to make choices from discovery to delivery the Library is moving one step closer to its goal of removing the barriers to access. The challenge is to simplify the web site to the point where the user does not require specialised knowledge to search and make choices. Future development of the web site will include on-going work to continue the simplification and consolidation of user interfaces, and the provision of options for users to personalise services.

Copies Direct (www.nla.gov.au/copiesdirect/)

As part of the web site restructure and redesign, the Library is rethinking the way in which it is providing access to users to items in its own collections. The Copies Direct service, introduced at the end of 2002, is an example of this. The provision of copies of items from the Library's collections is an important service for users outside Canberra, and especially for those in regional Australia who cannot readily visit a large research library. Copies Direct is a new 'one-stop shop' service that allows users to request a copy of any item in the Library's

collection. A single web-based form can be used by individuals to request copies of articles, chapters of books or in some cases whole books, pictures, maps, manuscripts, sheet music and oral history transcripts and tapes. Copies can also be provided for material held by other libraries. The user is charged a standard nominal fee for this service, regardless of the format of the material.

In developing this service, which replaces a range of separate services that required users to seek copies through different systems according to the format of material sought, the Library is seeking to make it as direct and simple as possible for users to get the information that they want.

Development of a digital services architecture

The development and delivery of the digital services described above is occurring within the context of the Library's strategic directions statement, with an emphasis on fast and convenient access. The key principles guiding the development of the Library's digital services architecture are:

- Support for integrated access to print and digital resources: the prime entry point to its own information resources is the Library's catalogue, since digital collections form an integral part of the total collection. Consequently the Library has ensured that all of its items in its digital collection are represented in its catalogue, and has also ensured that there are links from the catalogue records to the digital delivery systems
- Support the entire activity cycle for digital collections including collection, storage, management, discovery, access, web delivery and long-term preservation
- Ensure that every item in the Library's digital collections is citable and accessible in a persistent manner
- Support a hierarchical digital library data model, reflecting the complex nature of some collection items: for example, a sheet of manuscript material may form one of many sheets in a letter, which may form one of many letters in a series, which may form one of many series in a manuscript collection
- Provide users with contextual information, navigation pathways and service delivery options appropriate to the category of digital object being accessed
- Ensure that the Digital Collection Management System forms a logical extension of the Library's integrated library management system

With this in mind the National Library of Australia has developed an architecture for the management, discovery and delivery of its digital collections, embracing both digitised and born digital information resources (<http://www.nla.gov.au/dsp/>). The components of this architecture interoperate using recognised standards developed by communities working in the field of digital libraries. The main elements of the architecture are:

- A *Digital Object Storage System* (<http://www.nla.gov.au/dsp/#doss>)

- A *Digital Archiving System (PANDAS)* that provides staff with the tools to gather and manage archival copies of selected born digital Australian websites which users access via the PANDORA Archive (<http://pandora.nla.gov.au/manual/pandas/index.html>)
- A *Digital Collections Manager* database (www.nla.gov.au/dsp/#dcm) to record technical and management information about digital collection items and digital surrogates. The Digital Collections Manager supports the digitisation workflow by facilitating activities such as the uploading and downloading of files to and from the Library's digital storage system.
- A *Metadata Repository and Search System* which supports a number of aggregated and specialised resource discovery services (<http://www.nla.gov.au/pressrel/2002/teratext.html>)
- A *Persistent Identifier Resolver Service* so that all digital collection objects can be allocated a Persistent Identifier and can be accessed via the web using this identifier (<http://nla.gov.au/initiatives/persistence.html>)
- A series of *Delivery Systems* have been developed to date for digitised pictures, sheet music, maps and manuscripts in context with their bibliographic descriptions and facilities for page turning, zooming and other navigation aids. More information about this is available on the Library's website at www.nla.gov.au/digicoll/.

The Library was able to implement the lower and upper layers of its architecture (the Digital Object Storage System and the Metadata Repository and Search System) using products available in the marketplace. However, this was not possible for the middle layer, and the Library has been obliged to develop two significant software components itself. The Library hopes that it will be able to replace these components in the future with products from the marketplace.

Conclusion

The services described above are examples of the new direction in which the National Library of Australia is taking in developing its services to users. Described simply as 'breaking down the barriers' that prevent users from accessing the information they want, the Library is committed to collaborating with other institutions to ensure that information is available *nationally*, and that accessing that information is made as simple and direct as possible.