



ALIA 2006 Biennial Conference



Australian Library and  
Information Association

## **Workplace Practice**

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## **Libraries Australia and PictureAustralia: Innovation in access at the National Library of Australia**

### **Abstract**

The National Library of Australia has coordinated a national bibliographic database and resource sharing service for Australian libraries since 1981. Over the last two years, this service has been redeveloped and branded as Libraries Australia. In February 2006 a free version of the Libraries Australia Search service was released to increase access to the collections of Australian libraries. The service provides simple 'google-like' searching and extended getting options: online, via loans or copies from Australian libraries, or via online booksellers. Through this service anyone with an Internet connection can find out about 42 million items held by 800 Australian libraries. Item descriptions have also been exposed to Internet search engines such as Google so that content appears in web search results.

The second part of this paper describes a pilot project involving collaboration between the National Library and Yahoo!, owner of the Flickr photo sharing service. The aim of the project was to increase the number of contemporary images of Australian people, places and events in the National Library's PictureAustralia service. This was achieved by engaging with the Flickr online community and encouraging individuals to upload photos of Australia to flickr.com. Metadata describing these images, including titles, descriptions and Flickr tags, are harvested into the PictureAustralia service on a weekly basis. This innovative project opens up contribution to this service to individuals and complements the existing 1.2 million, largely historical, images in PictureAustralia from Australian and overseas cultural agencies.

## **Introduction**

The National Library of Australia has coordinated a national bibliographic database and resource sharing service for Australian libraries since 1981. From 1981 to 1999 this service was known as the Australian Bibliographic Network (ABN) and from 1999 to 2005 as Kinetica. The service was originally conceived for use by librarians to allow sharing of catalogue records and support interlending of items between Australian libraries. The service has always been funded through subscriptions of Australian libraries with additional subsidy by the National Library of Australia.

In late 2003 the National Library commenced the Kinetica Redevelopment Project (Missingham & Boston 2005), which aimed to make changes to the service that allowed:

- improvements for customers in areas such as search functionality, record contribution and online performance (response times);
- an improved capacity to innovate, and thus introduce further future improvements;
- integration of the Kinetica Chinese Japanese and Korean (CJK) service into the core system, providing the ability to handle all non-roman scripts supported by the Unicode standard;
- development of new search interfaces to meet the needs of individuals; and
- provision of an affordable solution, supporting service development within the available budget with an appropriate risk management approach.

## **Libraries Australia**

In November 2005, the two year project to redevelop the Kinetica service was completed on time and under budget. The redevelopment project replaced the software used for searching and cataloguing, and created a new administration system. The new service has been branded Libraries Australia and consists of Libraries Australia Search, Libraries Australia Cataloguing, Libraries Australia Administration and Libraries Australia Document Delivery. This major redevelopment project realised significant functional and performance improvements to the service and has been well received by its subscribers.

Libraries Australia provides easy-to-use search access to the Australian National Bibliographic Database [ANBD], which describes over 42 million items held by around 800 Australian libraries; PictureAustralia, with about 1.2 million images from Australian and overseas cultural agencies; and many international library catalogues. Users of Libraries Australia can easily find and get items from Australian libraries including national, state and university libraries and most public, research, government, health and other special libraries.

Over 1,100 Australian libraries subscribe to Libraries Australia. In July 2005, a new subscription model was introduced that charges an annual fee for unlimited access to the service rather than charging subscribers for the number of searches undertaken. The new charging model and the improved response times and functionality of Libraries Australia are encouraging

increased usage, particularly through libraries opening up access to the service for their patrons. The Libraries Australia service is an important component of the national research and information infrastructure and is only possible with the continued support and subscriptions of Australian libraries.

### **Free Libraries Australia Search service**

The October 2003 report into *Libraries in the Online Environment* (Senate Environment, Communications, Information Technology and the Arts References Committee 2003) recommended that the National Library of Australia receive additional funding to provide improved access to Kinetica (now Libraries Australia) for all Australian libraries and end users. Although it has not received any additional government funding to meet this recommendation, the National Library has developed a free version of Libraries Australia Search which is available to any user with an Internet connection at no cost. The free Libraries Australia Search service provides a simpler search experience for users and a subset of the functionality of the subscription service. The service was launched by Senator the Hon. Helen Coonan on 27 February 2006 at Parliament House, Canberra. Through the free search service, users can discover items from Australia's library collections and get them online, through their local library or another library via inter-library loan, and purchase a copy from an online bookshop or through the National Library's Copies Direct service. Regional launches of the free Libraries Australia Search service were held in Western Australia, Northern Territory and Queensland in May and June 2006

with other states to follow later in 2006. Since its release in February 2006, the free service has made up approximately 10 per cent of total Libraries Australia search activity.

In 2006 we expect over 11 million searches to be carried out against Libraries Australia up from about 6.5 million searches in 2005. This increase in activity can be attributed to the following factors:

- the redevelopment of Kinetica and release of Libraries Australia which is easier to use and has improved performance for both searching and cataloguing;
- opening up of access to the subscription service to Library patrons;
- the release of the free Libraries Australia Search service; and
- exposure of ANBD content to search engines like Google leading to increased use.

### **Improved finding and getting**

A recent study by the University of California Libraries' Bibliographic Services Task Force (2005) highlighted the importance of breaking down the barriers for users in getting access to resources via library catalogues. Recommendation 1.1b of the report says that library catalogue systems should 'provide an "I-want-this" button that is present when the context warrants, with the goal of always offering a fulfilment option. No dead ends.' It is no longer enough to provide information about resources through library catalogues; the barriers to fulfilment need to be removed so users can easily find and then get resources.

To this end Libraries Australia includes a 'Get this item' button that links to a page where users can find the item:

- online, for about 600,000 items links are provided to the item online;
- through your local library, users can link to local library catalogues to reserve an item or, of configured, to request an item via inter-library loan;
- through an online bookseller, users can link to Australian and International booksellers to purchase an item online; or
- through a document supply service, users can link to commercial document supply services like Infotrieve or CISTI or to the National Library's Copies Direct service to purchase a copy of the item.

In this way Libraries Australia provides better fulfilment for its users and attempts to bridge the gap between the physical and digital worlds. A gap which, with current digitisation rates, Calhoun (2006, p.27) estimates may continue to exist for at least 110 years. The National Library would like to continue to improve its 'getting' services and intends, in the medium term, to explore if new models for resource sharing are possible based around unmediated end user access and home delivery.

#### **More pathways, more users**

The National Library is committed to making resources available through a variety of channels to better reach our audience and increase access to Australian library collections. Provision of more pathways to information resources leads to increased use (Boston, 2005) and so, with the release of the free Libraries Australia Search service, the Library began discussions

with Internet search engines like Google and Yahoo! to index content from the Australian National Bibliographic Database.

A model for what is possible is provided by the Open WorldCat Program (OCLC 2006) which has operated since a pilot project in 2003 and through which several million bibliographic records from the WorldCat database have been indexed by Google and Yahoo! Records indexed by these search engines include the 3 million most widely-owned items in WorldCat, as well as a set of 450,000 records that represent unique items in the database.

With the release of the free Libraries Australia Search service, work began on getting the records in the Australian National Bibliographic Database, which sits behind Libraries Australia, indexed by major search engines. A twelve million bibliographic record subset of the ANBD was extracted in MARCXML format. The subset included all records for items held by Australian libraries plus any records of Australian content. The data was provided to Google in February 2006 and loaded into Google Scholar in April as part of Google's "Union Catalogue" program which includes data from the union catalogues of twelve countries world-wide: Australia, China, Czech Republic, Denmark, Ireland, Israel, Hungary, Lithuania, Netherlands, Taiwan, United Kingdom and United States. The records from these union catalogues were matched against existing Google Scholar data. Records that did not match an existing item in Google Scholar have been discarded. The results of the load into Google Scholar are adequate but some problems have

been identified with the matching algorithm used by Google. The Google matching algorithm appears to match with just the first record it finds from the ANBD. The Library has suggested that it would be better to find all candidate matches and then select the one with the most holdings in Australian libraries, a surrogate for the popularity of the item. The National Library is continuing to work with Google to improve the exposure of its data through their services.

Figure 1 shows a search of Google Scholar (2006) for *diabetes australia*.

Figure 2 lists the search results. The first three items are identified as books that are found in Libraries Australia, the other results are to journal articles which are not in scope for inclusion in the ANBD. Following the Libraries Australia link, the user is taken to the full bibliographic record for the item within Libraries Australia as shown in Figure 3. Users outside of Australia will not see the Libraries Australia link but they can click on "Scholar preferences" and select the National Library of Australia from the "Library Links" box to enable our union catalogue links to appear.



Figure 1: Search of Google Scholar for *diabetes australia*



Google Scholar BETA

diabetes australia Search

Advanced Scholar Search  
Scholar Preferences  
Scholar Help

**Scholar** Results 1 - 10 of about 47,800 for **diabetes australia**. (0.10 seconds)

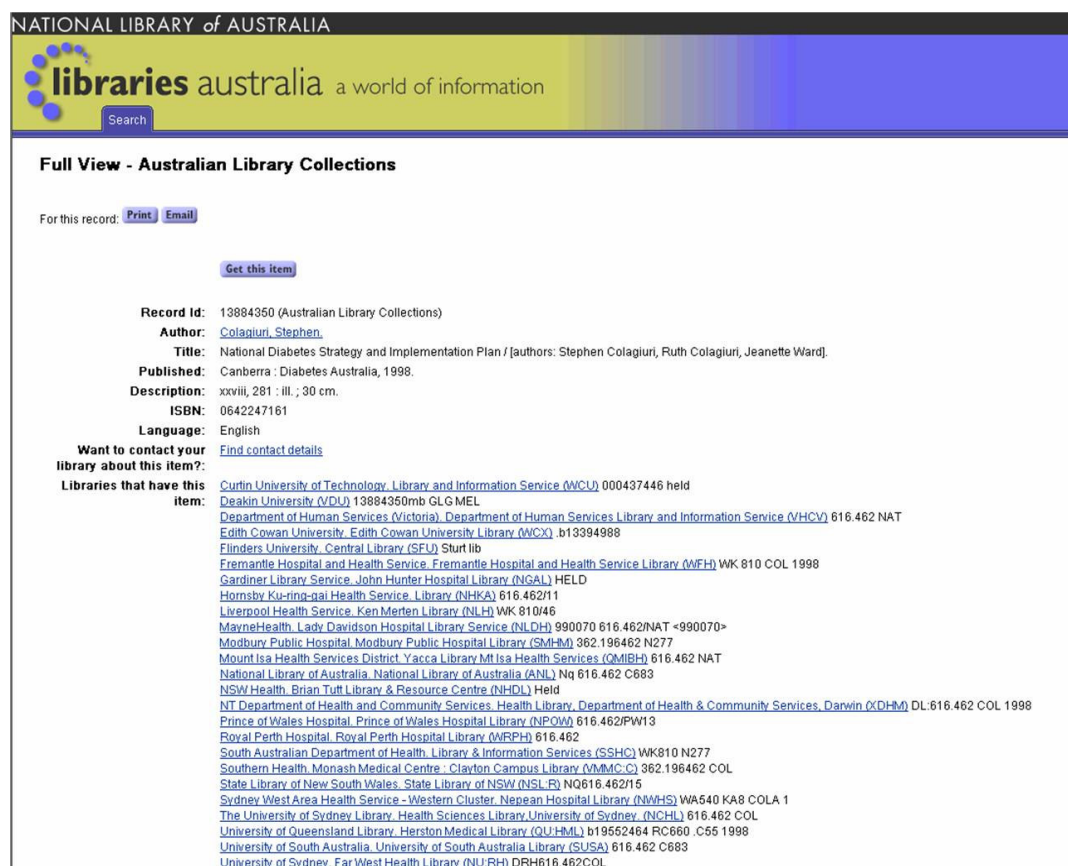
[BOOK] National **Diabetes** Strategy and Implementation Plan  
R Colagiuri, D **Australia** - 1998 - **Diabetes Australia**  
[Cited by 59](#) - [Web Search](#) - [Libraries Australia](#) [All articles](#) [Recent articles](#)

[BOOK] The rise and rise of **diabetes** in **Australia**, 1996: a review of statistics, trends and costs  
DJ McCarty... - 1996 - **Diabetes Australia**  
[Cited by 29](#) - [Web Search](#) - [Libraries Australia](#)

[BOOK] The **diabetes** epidemic: what **Australia** should do about it  
D **Australia** - 2004 - **Diabetes Australia**  
[Web Search](#) - [Libraries Australia](#)

[CITATION] the **Australia Diabetes** Society, editor. National Action Plan **Diabetes** to the Year 2000 and Beyond. ...  
D Nutbeam, M Thomas, M Wise - **Diabetes Australia**, 1993  
[Cited by 1](#) - [Web Search](#)

[CITATION] The rise and rise of **diabetes** in **Australia**, 1996  
DJ McCarty, P Zimmet, A Dalton, L Segal, TA ... - **A Review of Statistics, Trends and Costs**, 1996  
[Cited by 10](#) - [Web Search](#)

Figure 2: Google Scholar results showing links to *Libraries Australia*


NATIONAL LIBRARY of AUSTRALIA

libraries australia a world of information

Search

**Full View - Australian Library Collections**

For this record: [Print](#) [Email](#)

[Get this item](#)

**Record Id:** 13884350 (Australian Library Collections)

**Author:** [Colagiuri, Stephen](#)

**Title:** National Diabetes Strategy and Implementation Plan / [authors: Stephen Colagiuri, Ruth Colagiuri, Jeanette Ward].

**Published:** Canberra : Diabetes Australia, 1998.

**Description:** xxviii, 281 : ill. ; 30 cm.

**ISBN:** 0642247161

**Language:** English

**Want to contact your library about this item?:** [Find contact details](#)

**Libraries that have this item:**

- [Curtin University of Technology Library and Information Service \(WCU\)](#) 000437446 held
- [Deakin University \(VDU\)](#) 13884350mb GLG MEL
- [Department of Human Services \(Victoria\), Department of Human Services Library and Information Service \(VHCU\)](#) 616.462 NAT
- [Edith Cowan University, Edith Cowan University Library \(WCU\)](#) b13394988
- [Flinders University, Central Library \(SFU\) Sturt lib](#)
- [Fremantle Hospital and Health Service, Fremantle Hospital and Health Service Library \(WFH\)](#) WK 810 COL 1998
- [Gardiner Library Service, John Hunter Hospital Library \(NGAL\)](#) HELD
- [Hornsby Ku-ring-gai Health Service, Library \(NHKA\)](#) 616.462/11
- [Liverpool Health Service, Ken Merten Library \(NLH\)](#) WK 810/46
- [MavneHealth, Lady Davidson Hospital Library Service \(NL DH\)](#) 990070 616.462/NAT <990070>
- [Modbury Public Hospital, Modbury Public Hospital Library \(SMH-M\)](#) 362.196462 N277
- [Mount Isa Health Services District, Yacca Library Mt Isa Health Services \(QMBH\)](#) 616.462 NAT
- [National Library of Australia, National Library of Australia \(ANL\)](#) Nq 616.462 C683
- [NSW Health, Brian Tuohy Library & Resource Centre \(NHDL\)](#) Held
- [NT Department of Health and Community Services, Health Library, Department of Health & Community Services, Darwin \(DCHM\)](#) DL.616.462 COL 1998
- [Prince of Wales Hospital, Prince of Wales Hospital Library \(NPOW\)](#) 616.462/PW13
- [Royal Perth Hospital, Royal Perth Hospital Library \(WRPH\)](#) 616.462
- [South Australian Department of Health, Library & Information Services \(SSH\)](#) WK810 N277
- [Southern Health, Monash Medical Centre - Clayton Campus Library \(VMHC\)](#) 362.196462 COL
- [State Library of New South Wales, State Library of NSW \(NSL-NS\)](#) N0816.462/15
- [Sydney West Area Health Service - Western Cluster, Nepean Hospital Library \(NMHS\)](#) WA540 KA8 COLA 1
- [The University of Sydney Library, Health Sciences Library University of Sydney \(NCHL\)](#) 616.462 COL
- [University of Queensland Library, Herston Medical Library \(QUHML\)](#) b19562464 RC660 .C65 1998
- [University of South Australia, University of South Australia Library \(USAL\)](#) 616.462 C683
- [University of Sydney, Far West Health Library \(NURH\)](#) DRH616.462COL

Figure 3: *National Diabetes Strategy and Implementation Plan* linked to from Google Scholar

This book is held by the National Library of Australia and from this screen within a few clicks you can complete a request for the item through the 'Get this item' screen and its link to the National Library's catalogue. From Google to library request in just six clicks; six degrees of separation for the digital world!

Negotiations are continuing with Google to include all of the ANBD content within the main Google search index. Many users now begin their information discovery using Internet Search engines like Google and it is important for services like Libraries Australia to be represented. Google have committed to loading the ANBD records into the main Google search index in the second half of 2006. At the time of writing, the exact nature of links to ANBD content within Google have not been agreed, but it is likely that ANBD titles in Google search results will be prefixed with 'Libraries Australia' linking through to the full bibliographic details as shown in figure 3. As part of the loading process, Google intend to match and merge union catalogue records with existing data held in the Google search index.

The National Library is also creating a hierarchical browse interface to ANBD content within Libraries Australia to enable search engine crawlers to navigate to full bibliographic records and index the content. Methods used to expose database content, the 'deep web', so that they can be indexed by Internet search engines are described in Boston (2005).

### **Directions for Libraries Australia**

Building a better Libraries Australia service to meet the needs of Australian

libraries and their users is a key objective for the National Library. Since the release of the first version of Libraries Australia Search in December 2004, there have been eight major releases to better meet the needs of our users. Enhancements have included:

1. Personalisation so that users of the subscription service can configure their user interface, including the default search screen and databases searched and create alerts, save search queries and results;
2. End user requesting so that, when configured, library patrons can make inter-library loan requests;
3. 'Deep linking' so that users of Libraries Australia can click through to items in local library catalogues without having to re-do their search; and
4. Improved bookshop integration so that users of Libraries Australia can link to items from online book sellers without having to re-do their search.

Since completion of the Kinetica Redevelopment Project in late 2005 and the release of the free Libraries Australia Search service in February 2006, the Resource Sharing Division of the National Library has concentrated on bedding down the new systems and solving some post-implementation issues. These have mainly revolved around the Record Import Service used for loading data into the ANBD, which uses the match/merge utility of the new Update database, the CBS software from OCLC PICA (n.d.). NLA staff have gone through a steep learning curve to understand and use this utility and have resolved quite a few problems in the software with the supplier OCLC PICA. As of June 2006, these problems are

largely resolved and our attention is turning to more strategic issues.

Directions for the service over the period 2006-2008 include:

1. Implementation of relevance ranking for search results;
2. Implementation of result clustering based on concepts from FRBR (IFLA 1998) and structured metadata in MARC records to allow users to browse related information in result sets, for example subjects, authors, dates, genres;
3. Resolution of any cataloguing and search issues relating to use of non-roman, non-CJK character sets such as Thai and Arabic in bibliographic records;
4. Improving the coverage of holdings for Australian libraries in the ANBD, especially public and possibly school libraries;
5. Integration of directory services offered by the National Library such as Australian Libraries Gateway and the Interlibrary Resource Sharing Service (ILRS) with Libraries Australia and implementation of support for distributed authentication and authorisation schemes such as Shibboleth;
6. Improved 'get' options including links to digitised books from sites like Project Gutenberg, the Million Book Project, Google Book Search and the Open Content Alliance; and
7. Improved data quality through elimination of duplicates in the database and improvements in the matching and merging of records.

### **PictureAustralia Flickr pilot**

In January 2006, the National Library announced a pilot project in collaboration with Yahoo!, the owners of the Flickr photo sharing service (Yahoo! Inc. 2006a), which was designed to:

- Enrich the heritage collections available through PictureAustralia with more contemporary content; and
- Build new service models by engaging with the Flickr online community.

PictureAustralia is an online service run by the National Library since September 2000. Since that time the service has grown from about 470,000 images from seven cultural agencies to nearly 1.2 million images from forty-five Australian and overseas agencies. Libraries, museums, galleries, archives, universities, government and scientific agencies are represented in this service which aims to represent Australia cultural heritage through images of Australian people, places and events.

In January 2006 Flickr contained more than seventy million photos uploaded by people from all over the world; every four seconds a new image is added by the site's two million users (National Library of Australia 2006a). Using Flickr anyone can share and organise their photos, about 80% of photos are publicly available and many special interest groups are formed by people using Flickr with an interest in a particular type of photography. Flickr is an example of what has been called a social networking site where users can add their photos to groups with similar interests and comment on each others images.

NLA has created two groups on Flickr, one called Australia Day which happened around the time the pilot started and another more general group called People, Places and Events. As of late June 2006, over 5000 images have been added to these two groups. Each week, the National Library harvests the metadata for images in each of these groups into PictureAustralia. In this way it is now easy for individuals to contribute their images to the PictureAustralia service.

The images added to PictureAustralia groups on Flickr are not harvested, only the metadata describing the images. Users of Flickr can assign title, descriptions and a series of tags to their

images. Flickr has a well documented web services Application Programming Interface (API) that can be used by registered developers to get access to information about users, their images and the metadata describing their images (Yahoo! Inc. 2006b). This metadata has been mapped to the unqualified Dublin Core schema (Dublin Core Metadata Initiative 2004) used by PictureAustralia. The metadata mapping used is shown below in Table 1. For example, Flickr tags added by users are mapped to the Dublin Core subject element. Each week the PictureAustralia harvester connects to Flickr and gathers all of the metadata describing images added to the PictureAustralia groups.

<i><b>Flickr element/attribute</b></i>	<i><b>PictureAustralia Dublin Core element</b></i>
URL	DC.Identifier.URL
Photo@Id,Secret,Server*	DC.Identifier.URL.Thumbnail
Photo@Id	DC.Identifier
Title	DC.Title
Description	DC.Description
Owner@Realname,Location	DC.Creator
Dates@Taken	DC.Coverage.Temporal
Tag	DC.Subject
"Flickr"	DC.Source
Photo@license	DC.Rights

\*[http://static.flickr.com/<server>/<id>\\_<secret>\\_t.jpg](http://static.flickr.com/<server>/<id>_<secret>_t.jpg)

Table 1: Metadata mapping between Flickr and PictureAustralia

The Flickr element/attributes described above are part of the XML response from the Flickr server describing a particular photo. Below is an example XML response for an image created by

a National Library staff member, Paul Livingston, who contributed images of Australia Day fireworks in Canberra to Flickr and PictureAustralia.

```

<?xml version="1.0" encoding="utf-8" ?>
<rsp stat="ok">
<photo id="91668708" secret="3bba317e28" server="40" dateuploaded="1138339416"
isfavorite="0" license="0" rotation="0" originalformat="jpg">
  <owner nsid="43748737@N00" username="paullivo44" realname="Paul Livingston"
location="Canberra, Australia" />
  <title>Fireworks 6161</title>
  <description>Australia Day 2006 fireworks, Canberra Australia, National Library of
Australia on the shores of Lake Burley Griffin.</description>
  <visibility ispublic="1" isfriend="0" isfamily="0" />
  <dates posted="1138339416" taken="2006-01-26 20:11:21" takengrularity="0"
lastupdate="1138788143" />
  <editability cancomment="0" canaddmeta="0" />
  <comments>1</comments>
  <notes />
  <tags>
    <tag id="1989424-91668708-8512" author="43748737@N00"
raw="Australia">australia</tag>
    <tag id="1989424-91668708-4626" author="43748737@N00"
raw="fireworks">fireworks</tag>
    <tag id="1989424-91668708-5702" author="43748737@N00"
raw="Library">library</tag>
    <tag id="1989424-91668708-2260002" author="43748737@N00"
raw="Paul Livingston">paullivingston</tag>
    <tag id="1989424-91668708-777957" author="43748737@N00"
raw="National Library of Australia">nationallibraryofaustralia</tag>
    <tag id="1989424-91668708-406756" author="43748737@N00"
raw="NLA">nla</tag>
  </tags>
  <urls>
    <url
type="photopage">http://www.flickr.com/photos/43748737@N00/91668708/</url>
  </urls>
</photo>
</rsp>

```

This image is available through PictureAustralia at:

<http://nla.gov.au/nla.cs-pa-http%253A%252F%252Fwww.flickr.com%252Fphotos%252F43748737%2540N00%252F91668708%252F>.

When a user loads an image to Flickr, by default the image is listed as 'Copyright, all rights reserved' to the image creator. Flickr also supports the assignment of any of six Creative Commons licences to images (Yahoo! Inc. 2006c). When PictureAustralia harvests Flickr metadata, the license assigned to an image by the Flickr user is harvested and included in the

DC.Rights element. The National Library is encouraging Flickr users that add images to PictureAustralia to assign one of the Creative Commons licenses. While this is not a condition of adding photos to the PictureAustralia groups, using Creative Commons licenses provides scope for greater access and use of the images. It also makes it easier for the National Library to display

images when promoting the PictureAustralia Flickr pilot, on the National Library's website or through public presentations, while still allowing control over images for creators. Of the six Creative Commons licenses available, the "Attribution-NonCommercial License" allows others to display the image for non commercial purposes providing they attribute the creator.

Users who add images to the PictureAustralia Flickr groups are also able to easily remove their images from these groups and hence from PictureAustralia at any time. The National Library is considering how to preserve significant images for the long-term that have been added to PictureAustralia via Flickr. For selected images, the Library is contacting the creator and requesting a copy for the Pictures Collection. A high resolution copy of the image is obtained and preserved within the Library's Digital Object Storage System. In this way, the Flickr project is providing one means to improve the range of images and potentially fill gaps within the Library's Pictures Collection.

Another issue that has arisen is the quality of the metadata added to images in Flickr. Although user tagging is emerging as a significant phenomenon within social networking applications like Flickr on the Internet (Shirky 2005), when user tags are combined with more rigorously structured metadata, some retrieval issues can arise. Flickr users adding images to PictureAustralia are being encouraged to create titles and descriptions for their images and to assign meaningful tags so that their images can more easily be retrieved

through search services like PictureAustralia. Common practices within Flickr, such as removal of spaces between words when tagging images, eg "operahouse" instead of "opera house", cause obvious retrieval problems in PictureAustralia when combined with higher quality image metadata supplied by cultural agencies.

The PictureAustralia Flickr pilot was undertaken as part of the Library's desired outcome 5 of its *Directions for 2006-2008* (National Library of Australia 2006b) which states that: 'To ensure our relevance in a rapidly changing world, participate in new online communities and enhance our visibility, we will: ...' explore new models for collecting digital material'. Services like Flickr created around communities of interest provide a model for future development of National Library services. This is also reflected in desired outcome 5, which states that the National Library will 'enhance opportunities for existing and new users to share ideas, including the development of innovative online "spaces" for Library users to interact with us and among themselves.' To this end, the Library would like to allow user contribution and annotation of many of its services to further engage with our users.

The PictureAustralia Flickr pilot has been a very successful and technically relatively easy-to-implement project that is 'putting the library in the user environment, rather than expecting the user to be in the library environment' (Dempsey 2006). It is also increasing the number of contemporary images of Australia in the PictureAustralia service and allowing the National Library to

engage with the emerging online community that is Flickr.

### Conclusion

Libraries Australia and the PictureAustralia Flickr pilot represent two recent examples of innovation in access services by the National Library of Australia. These services enable increased access to Australian library

collections and image collections of Australian and overseas cultural agencies. It is hoped that in future the boundaries between collections, cultural agencies and their patrons continue to break down through the use of Internet technologies, to provide a more integrated and holistic experience for our users.

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<http://www.flickr.com/creativecommons>