SUBMISSION

INQUIRY INTO THE ROLE AND POTENTIAL BENEFITS

OF THE NATIONAL BROADBAND NETWORK

FEBRUARY 2011

Contents

1. Introduction

The National Library of Australia (NLA) welcomes the opportunity to make a submission to this inquiry into the role and potential benefits of the National Broadband Network (NBN).

This submission will primarily address the following terms of reference:

- the delivery of government services and programs, and in particular the delivery of information services by government operated libraries and other collecting institutions, including delivery of services to regional Australia;

- improving the educational resources available for teachers and students, especially through exploiting the digital collections of libraries and other collecting institutions;

- interaction with research and development and related innovation investments; and

- facilitating community and social benefits.

The NLA is Australia's largest public research library. Its Act gives it a mandate to build a national collection of library material, to make that collection available in the national interest, to provide other services including bibliographical services, and to cooperate with

other institutions in library matters. All of these roles can be related to the delivery of content through the NBN.

The National Library's strategies and priorities for the period 2009-2011 are set out in its Directions Statement (http://www.nla.gov.au/library/NLA_Directions_2009-2011.pdf).

Summary of this submission

The key points made in this submission are:

- the NLA is building a rich and complex set of digital collections, which is already attracting heavy use from the education and research communities, and the general public;

- as less than 4% of the NLA's collection has been digitised, and as Australia is lagging behind the digitisation activities of many other countries, there is a pressing need for a national fund to support the further development of Australia's digital collections;

- the NBN, with its increased speed and capacity, promises to be a critical infrastructure for all Australians, and will enable the community to use and interact with our collections;

- by developing services such as *Trove*, the NLA is also active in improving access to Australia's digital and traditional collections;

- creative use of the digital collections of Australia's libraries, archives, museums and other collecting institutions has the potential to realise a wide set of benefits for the Australian community, including benefits in public information, primary and secondary education, and research; and

- a study undertaken in 2007 found a benefit/cost ratio of 6.5 to 1 from a specific proposal by the NLA and two other agencies to invest in expanded digital collecting capacity.

Submission by National & State Libraries Australasia (NSLA)

The NLA is a member of NSLA (National and State Libraries Australasia) and supports the observations made in the NSLA submission to this inquiry. For example, the NLA notes that:
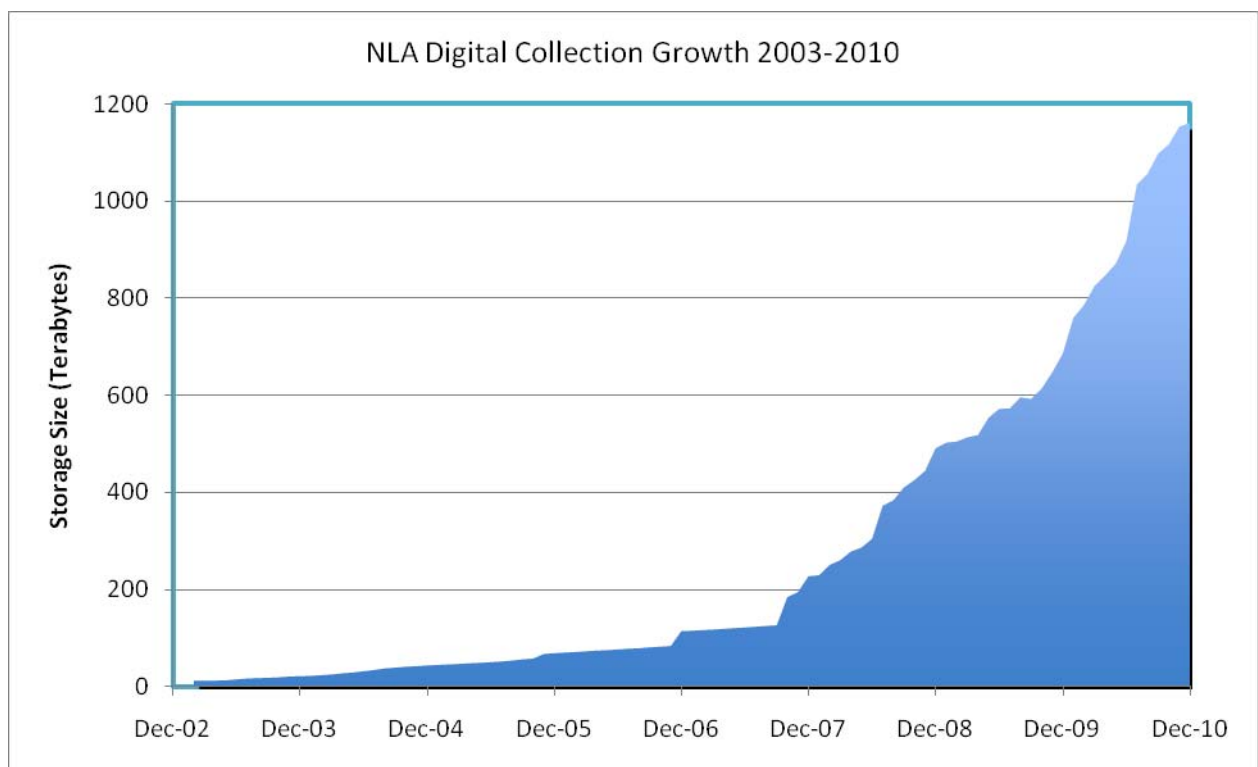
- very significant investments in the print and other traditional collections of NSLA members have been made by the national, state and territory governments;

- to provide equity of access and to deliver a return on this investment, significant components of these collections must be digitised and made available for access via the internet;

- such digitisation will support universal access, including access to those residing in regional, rural and remote areas who cannot easily access physical libraries;

- file sizes are increasing as film, oral history, research data sets, archival collections and high quality images are digitised and made available online, and the NBN will have the capacity to carry this content to all Australians; and

- Australia lags many other countries in directing extensive public funding to mass digitisation and there is a need, in parallel to the roll-out of broadband infrastructure, for Australia to invest in digitising our content.

2. The digital collections of the NLA

The *National Library Act 1960* requires the NLA to build and maintain a national collection of library material, including a comprehensive collection relating to Australia and the Australian people. Information resources in digital form are already a key component of this documentary record, and will become even more critical in the medium term future. This content documents and describes all aspects of Australian life and culture, from both popular and scholarly perspectives. The NLA must collect this content to ensure that it will not be lost to future generations of Australians.

The graph below shows the growth of the NLA's digital collections during the period 2003 to 2010. The aggregate size of the NLA's digital collections increased from 2 terabytes to nearly 1200 terabytes during this period.

An important component of this content comprises web sites and other online publications. In 1996 the NLA established *PANDORA: Australia's web archive* to ensure that significant Australian online publications will be preserved for future access. PANDORA is a collaborative undertaking involving the NLA, the state and territory libraries and some national cultural institutions.

As web sites archived in *PANDORA* frequently disappear from the live internet, the *PANDORA* copy is often the only one that exists. Examples include the official web site of the Sydney Olympic Games, the Centenary of Federation web site, the site that recorded the activities of the international peace-keeping force in East Timor and most web sites created for Australia's state and federal elections.

Because PANDORA is a highly selective collection, the NLA has also, since 2005, carried out annual large-scale harvests of the Australian web domain.

In archiving web sites, the NLA is hindered by the limited legal deposit provisions of the *Copyright Act 1968* (which have not been extended to publications in digital form) and by the provisions of the *Copyright Act 1968* which prevent the NLA from copying and harvesting (without permission) freely accessible web materials, or to provide viewing access to the archived copies.

In addition to web sites, the NLA collects digital content such as pictures taken with digital cameras, files of e-mail correspondence, and personal or organisational records on computer disk. An example of the latter is the research records of Nobel Laureate Dr Robin Warren, which the Library acquired with his archive in 2007.

The NLA has also been building its digital collections through digitisation of components of its traditional collections. Digitisation enables quick and easy access to the item itself, wherever the user happens to be. The NLA has now digitised around 350,000 paper based collection items including maps, manuscript items, sheet music, pictures and a small number of books and pamphlets. Excluding the Newspaper Digitisation Program, the Library's digitisation activities have cost more than $13M over the past 10 years, but have digitised less than 4% of the NLA's traditional collections.

This tiny percentage of the NLA's total collections is currently receiving about 130,000 accesses each month by the NLA's users. This compares with less than 20,000 accesses per months for all of the Library's physical collections, which total about 10 million items.

The NLA's first attempt at carrying out a large scale digitisation project is the digitisation of major Australian newspapers published before 1954, and of the *Australian Women's Weekly* up to 1982. This project has now digitised more than 4 million pages, all of which are fully searchable through the NLA's online discovery service, *Trove* (http://trove.nla.gov.au). This service is freely available to the public, from any location.

This digitisation program supports immediate access to primary evidence for a wide range of user groups from researchers, students and teachers to the broader general community.

As well as digitising its paper based collections, the NLA is migrating its oral history recordings from analogue tape form to digital form. So far, more than 60% of its oral history collection of more than 40,000 hours is in digital form, and more than 1000 interviews can be listened to in full online.

The NLA also subscribes to electronic journal packages and other authoritative information provided by publishers and information aggregators. These "e-resources" are provided to registered users of the NLA, whether onsite or offsite.

Comparative developments overseas

In 2009 the Government of Japan allocated 12.7 billion yen (about A$160 million) to the National Diet Library to allow the digitisation of 900,000 books and other collection items. In the same year the Government of France allocated the equivalent of A$1.2 billion to support the digitisation of French literary works, audiovisual archives and historical documents through a public-private partnership.

The European Commission has funded *Europeana*, which aims to give access to all of Europe's digitised cultural heritage by 2025, and to allow exposition of Europe's cultural and scientific resources for every citizen. In supporting *Europeana*, the European Council of Ministers stated that "Digitisation and online accessibility are essential ways to highlight cultural and scientific heritage, to inspire the creation of new content and to encourage new online services to emerge. They help to democratise access and to develop the information society and the knowledge-based economy".

There are many other examples around the world of significant government investment in fast tracking the digitisation of unique national cultural content, for universal access by citizens.

3. Discovery and delivery of digital content

Libraries and other collecting institutions are working to ensure that their growing digital collections can be discovered and accessed freely and easily by the public. Developments such as the Government 2.0 report (http://www.finance.gov.au/publications/gov20taskforcereport/index.html) and the open access movement (http://dlc.dlib.indiana.edu/dlc/bitstream/handle/10535/4445/Suber_Creating_041004.pdf) are encouraging greater ease of access.

The NLA has been working to improve the discovery and delivery of its digital collections, and to improve the ability of the public to interact with these collections.
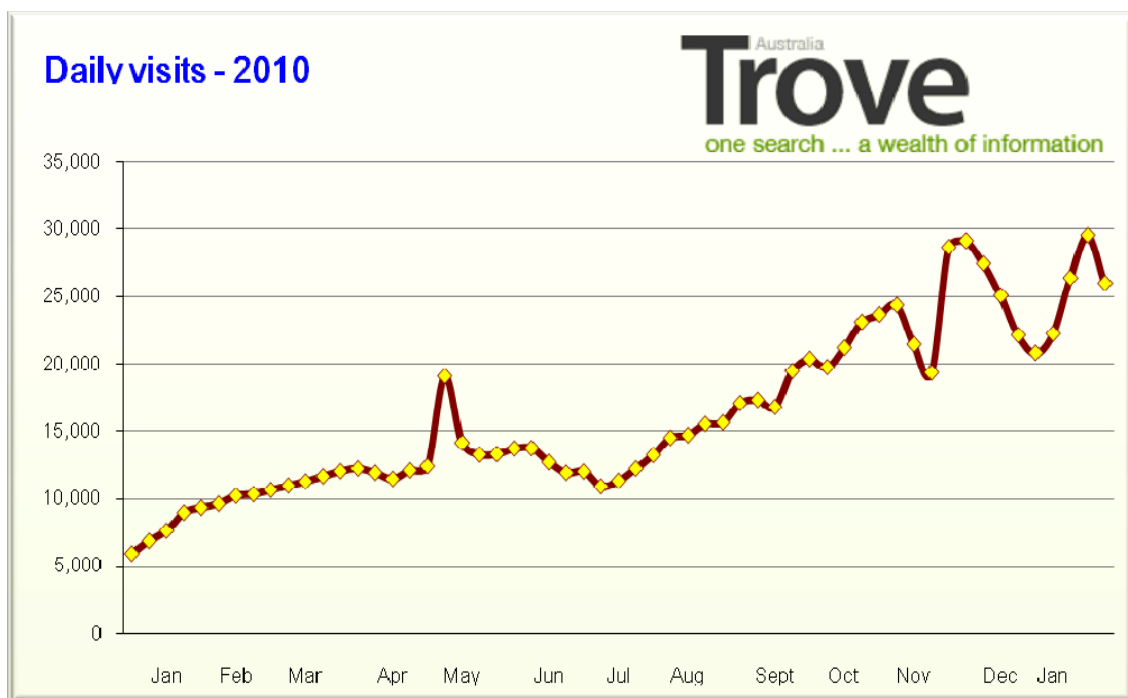
The NLA's delivery systems allow digitised pictures to be viewed along with their associated descriptive information; they allow digitised multi-page items (such as books, manuscript items and music scores) to be viewed with easy navigation between pages; they allow digitised maps to be examined, with zooming and navigation around the map; and they allow oral history recordings to be played, alongside their timed summaries, allowing easy searching for specific content within the interview. They also allow presentation of archived websites, with easy selection of particular snapshots during the history of the website. For digitised newspapers, the delivery systems support zooming, linking of articles that are continued on subsequent pages, printing of specific articles, and user correction of errors in the computer generated text that is used for searching.

The NLA has developed a free online service, Trove (http://trove.nla.gov.au), which allows the public, and researchers, to discover, locate and annotate collection items held by more than 1000 Australian libraries, a wide range of other collecting institutions, and major digitised book, journal and newspaper collections.

Any of the data in *Trove* can be annotated by the users, meaning that citizens are able to engage with a very large range of Australian collection items. This accords with one of the NLA's objectives, to "explore new models for creating and sharing information and for collecting materials, including supporting the creation of knowledge by our users".

Annotation has the benefit of improving the data, for example by allowing people and places in photographs to be identified, or for associations to be made between different documents. To date users of *Trove* have added more than 600,000 comments and tags, corrected more than 24 million lines of newspaper text, and contributed more than 80,000 digital images.

The graph below shows the growth of the use of Trove since it was released in late 2009. The number of visits has grown steadily from about 5,000 per day to 30,000 per day during this period.

4. Benefits of the NBN

In the introduction to this submission, it was observed that the benefits of the NBN's high speed broadband connections to Australian homes and workplaces are intrinsically related to the content that the NBN will deliver. In areas such as public information, primary and secondary education, and research, there will be a clear benefit from the online availability of content such as Australian films, music, newspapers, journals, historic documents, oral history interviews and government records.

It was observed that such content is now being collected in digital form by Australia's libraries, archives, museums and other collecting institutions. These institutions have a strong role to play in developing, organising and delivering content of significance to the community. They hold resources that will meet the needs of lifelong learning and our culturally diverse society.

It was observed that the nation will benefit if the Australian cultural content represented in these collections were available in digital form: otherwise, the national resources devoted to the broadband revolution will be dominated by sources that do not acknowledge the Australian story.

In addition to the NLA, collecting institutions such as the National Film & Sound Archive and the National Archives of Australia, which hold large collections of video content, will be able to deliver significant benefits to their users through an expansion of broadband capability.

Example 1: Public information

During the week of the Brisbane floods in January 2011, the NLA's catalogue received an extraordinarily high number of hits relating to a catalogue record for a map depicting the impact of the 1974 Brisbane flood. In response, staff of the NLA rapidly digitised this map so that users of the Library's catalogue would be able to peruse the map itself. This incident illustrates the public information value of online access to Australia's library collections. With high speed broadband, the entire map could be rapidly downloaded by users, allowing them to peruse the map offline or to print relevant parts of it.

The Library regularly receives feedback from members of the public who have reported that accessing the digital content from the Library's web site is impossible for them as they lack a broadband connection. In such cases the Library has suggested that the user's local public library may provide a better access option.

Example 2: Primary and secondary education

The Government's "Digital Education Revolution" program aims to improve learning in Australian schools and to prepare students to live and work in a digital world. This program is currently focussing on the provision of computer equipment in schools and the strengthening of broadband connections to schools. The NLA believes that there is an opportunity to significantly improve access to Australian historical and cultural content, which will enhance the learning of school students.

For example, digitised pictures, maps, newspaper articles and other content from the NLA's collections can be used in the classroom, or in assignments by students, as evidence to illustrate particular themes in the curriculum. Each of these resources can be cited using an identifier which directs the user or reader to the digital resource at the NLA's web site.

One of the most heavily used web sites in the PANDORA archive is the Centenary of Federation web site. This site disappeared from the Internet at the end of 2002, along with its rich set of information resources about the history of Australia. The NLA archived it four times, and the archive snapshot taken on 3 January 2001 contains goodwill messages from

the heads of state of more than 80 countries on the occasion of our centenary as a nation. This PANDORA resource provides another important example of the use of the NLA's digital collections in the education context.

It was noted above that the NLA subscribes to a wide range of e-resources provided by publishers and information aggregators. Some of these e-resources are particularly relevant to the school curriculum, and access by schools to such products will be enhanced through the improved online access that will be offered through the NBN.

Example 3: Research

The report on the 2008 Review of the National Innovation System ("Venturous Australia") emphasised that national collections are a necessary foundation for research and innovation. It observed that these collections contain essential resources for researchers in all fields, from basic scientific research to the social sciences, humanities and creative arts. The report went on to say that these collections

… play a vital role for educators (from pre-school to postgraduate) and for the broader community in building scientific, historical and artistic knowledge and literacy and in fostering cultural knowledge, identity and cohesion.

The Government has a number of programs supporting research in the higher education sector. Many of these research projects depend on access to appropriate historic records. An example is the Climate History Project being led by the University of Melbourne which is reconstructing pre-20th century climate information for south-eastern Australia using palaeoclimate, documentary and early weather station data. A key source of data for this project is Australian newspaper articles of the 19th century, which are being made available through the NLA's Newspaper Digitisation Program. Access to this content will be facilitated by Trove, and by reliable and high speed internet access.

Researchers in the humanities will also be able to benefit by accessing, downloading and analysing primary sources such as oral history interviews from the NLA's collection, more than 1000 of which are now delivered online. High speed broadband will significantly enhance the access to such source materials.

Cost benefit analysis

During 2007, the NLA collaborated with two other national collecting institutions (the National Archives of Australia and the National Film & Sound Archive) to commission a cost-benefit analysis of a proposal to upgrade their digital collecting infrastructure to meet contemporary needs. The three agencies engaged a leading economic consulting company (Access Economics) to undertake this analysis. Access Economics developed a model which assessed the cost estimates prepared by the agencies against estimated benefits.

The Access Economics benefit model analysed the value of the proposal from the perspective of the Australian community as a whole. The consultants developed a number of approaches to assess the benefits, including a 'user approach' which examined the costs and time incurred by users in accessing digital content compared to traditional content.

The consultants found an aggregate benefit-cost ratio of 6.5 to 1 for the three agencies, with a ratio of 20 to 1 for the NLA. The consultants commented: 'the benefits are significant and in large part accrue to users of the agency's material. The investments allow more material to be collected or preserved, and that material in digital form is more accessible to potential users than it otherwise would be'.

Summary of benefits

From the perspective of this submission, the benefits of the NBN may be summarised as follows:

- existence of the NBN, combined with digitisation of significant collections, will benefit students, teachers, researchers and the general public in time saved to access collection material, and in a greater range of collection material being available;

- remote communities will benefit from improved access to information and cultural collections; and

- from a social inclusion perspective, there will be more widespread and egalitarian access to information, where the delivered content is free.

5. Conclusions and recommendations

The benefits of the NBN are closely related to the content that it will deliver, and a key component of that content is the digital information that is now being collected by Australia's libraries, archives, museums and other collecting institutions. Creative use of this information has the potential to realise a wide set of benefits for the Australian community, including benefits in public information, primary and secondary education, and research.

The NLA can play a major role through:

- Further development of its digital collections, building on the achievements of the past decade

- Continuing to aggregate data from Australian collections of all kinds, and facilitating access to these collections through its online discovery service, Trove

- Working with user communities (including those in education, research, industry and family history) to plan for improved content development and discovery.

The NLA recommends:

1. That, in establishing policies for the development of the NBN, the Department of Broadband, Communications and the Digital Economy take steps to encourage the inclusion of more Australian content, including digital content from Australia's collecting institutions.

2. That the Australian Government establish a fund aimed at expanding the quantity and range of digital collection content offered by Australia's collecting institutions.