Meeting of Cultural Ministers

Digital technologies Working Group

Final Report

1. Meeting of Cultural Ministers: Digital Technologies

At the Hobart Meeting of Cultural Ministers in 2013, Ministers from all jurisdictions—Commonwealth, State and Territory—and the President of the Australian Local Government Association agreed to work collaboratively on a small number of pressing specific issues over the following two years.

Digital Technologies was agreed to be one of these focus areas.

A Digital Technologies Working Group was established with representation from all jurisdictions involved in the Meeting of Cultural Ministers. Victoria has taken the lead on this focus area of the Two Year Work Program, and chairs the Working Group.

Digital Technologies Working Group Objectives

The Digital Technologies Working Group aims to:

- review options for a national approach to increasing access to the nation’s cultural collections by aligning digital search capability and approaches to open data;
- review options for establishing best practices and standards around aligned search capability and open data to ensure the quality, longevity and compatibility of digital resources;
- investigate ways to demonstrate and reduce duplication of effort in the production and storage of digital resources;
- investigate ways to share expertise, strategies and infrastructure to maximise the value of the nation’s cultural heritage; and
- identify successful models of digital innovation that demonstrate improved engagement with education, tourism, community and business sectors.

2. Major collecting institutions

During 2014, the Digital Technologies Working Group undertook a survey of 45 state-owned collecting institutions from across the galleries, libraries, archives and museums (GLAM) domains in all Australian jurisdictions (Commonwealth, State and Territory). A full list of the participating institutions is at Attachment 1.

This survey collected data from these institutions in relation to their collections on:

- the extent of digitalisation activities, including outsourcing
- digital search capabilities
- the availability of collections online
- the addition of digitised elements (e.g., scanned images, film clips) to online collections
- the use of machine-readable metadata (searchability)
- digital technology innovation
- issues and barriers to digitisation programs.
Dr Darren Peacock of Sociable Technology was commissioned to compile and analyse the results of the survey of state-owned GLAM institutions.

**Summary of survey findings; an overview of state-owned GLAM collections**

The survey showed strengths in the amount of content made available and in local distribution systems. The digitisation activities of Australia’s major public collecting organisations have produced a large amount of digital content and accessible online databases of collection records. Individual organisations have generally been successful at making that content available through their own distribution channels, particularly online collection databases.

Public collections in Australia comprise over 200 million items, the largest being public archive records, natural science materials and public library materials.

![Pie chart showing distribution of collection types.](image)

The pie chart shows indicatively that, of the over 200 million items in public collections:

- almost half are public records
- approximately a sixth are natural science materials objects
- approximately a sixth are public library objects
- approximately a tenth are documentary photographs
- approximately a twentieth are works on paper
- approximately a thirtieth are social history artefacts
- the remaining items, which comprise around a thirtieth, or 3% of the total, comprise all the other collection types which include: social history archives, indigenous culture, archaeology, moving images, sound recordings, decorative arts, photographs—art, science and technology, textiles/fashion, rare books, paintings—art, indigenous arts, 3D/sculpture, paintings—documentary, and new media art.

Just under a half of all these items have information describing the items which is publicly available via an online database. One in 20 of the total number of items (5%) has further digitised elements accessible to the public through an online database. These digitised elements are most likely to be an image or scan of the item, but may also include multiple images, a film or a sound clip.
Percentages of total collections in all state-owned GLAM institutions publicly accessible online

Text description:

<table>
<thead>
<tr>
<th>Collection</th>
<th>available via online database</th>
<th>with additional elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Records</td>
<td>48%</td>
<td>2%</td>
</tr>
<tr>
<td>Natural Science Materials</td>
<td>20%</td>
<td>2%</td>
</tr>
<tr>
<td>Public Library Materials</td>
<td>85%</td>
<td>8%</td>
</tr>
<tr>
<td>Photographs—Documentary</td>
<td>43%</td>
<td>12%</td>
</tr>
<tr>
<td>Works on Paper</td>
<td>14%</td>
<td>10%</td>
</tr>
<tr>
<td>Social History Artefacts</td>
<td>35%</td>
<td>33%</td>
</tr>
<tr>
<td>Social History Archives</td>
<td>24%</td>
<td>5%</td>
</tr>
<tr>
<td>Indigenous Culture</td>
<td>13%</td>
<td>3%</td>
</tr>
<tr>
<td>Archaeology</td>
<td>13%</td>
<td>3%</td>
</tr>
<tr>
<td>Moving Images</td>
<td>20%</td>
<td>3%</td>
</tr>
</tbody>
</table>
The survey revealed weaknesses in the use of standardised and machine readable metadata, and a lack of consistency and co-ordination across organisations, domains and jurisdictions, making it difficult from a user perspective to locate and access digital resources across institutions.

Digitisation practices tended to be individualised and localised within the institutions surveyed, and many organisations lacked a strategic framework to guide their digital activities and priorities.

The survey also revealed a need for more resources for digitisation—both finance and skills.
It was noted that the survey provided quantitative data that support and underscore the findings and recommendations made in the CSIRO’s 2014 GLAM sector study, *Innovation Study: Challenges and Opportunities for Australia’s Galleries, Libraries, Archives and Museums*.

The report of the MCM *Digital Technologies Survey* includes recommendations identifying options and opportunities for increasing access to publicly-owned collections, as well as areas for future investigation and work.

Chief recommendations involved collaboration to develop cross-domain and cross-jurisdictional digital strategies; and greater sharing and standardisation for the creation of and access to digital resources. A full list of recommendations is at Attachment 2.

**Feedback on the Digital Technology Survey Report**

Following the meeting of MCM Officials in June 2015, Creative Victoria circulated the report seeking feedback from the GLAM peak bodies.

Small to medium collecting organisations were also surveyed following the June 2015 meeting through their peak bodies in each jurisdiction. Responses were less comprehensive than the survey of majors. The response was broad enough to draw indicative results for this very large number of organisations.

A comprehensive survey of these organisations was not possible within the resources of the Working Group. There remains a need to establish, in the first instance, the size of the distributed collections managed by these organisations.

The peak bodies also met in June as the Digital Access Conversation to share an understanding of the current state of digitisation in the GLAM sector and the potential and opportunities for further development and future initiatives. The outcomes of that meeting provided further feedback into this final report.

A full list of those who provided feedback on the report is at Attachment 3.

**3. Digital activities in small to medium organisations**

Small to medium organisations hold significant cultural collections that are important to and valued by their local and regional communities, and together are a significant component of the national collections.

Digital capabilities and digital access to collections in this sector are often limited and highly variable, especially in the case of the many volunteer-run museums, other heritage collections and historical societies.

A number of respondents proposed that attention be given to digitisation issues for the small to medium organisations; that they be drawn into the process of policy formulation through their peak bodies; and that their needs be considered in the development of digitisation standards and tools. The development of digitisation strategies for each domain at the state/territory level led by GLAM peak bodies in partnership with lead agencies was suggested as a means to ensure that the requirements of small to medium organisations are accommodated.

Feedback from the small-to-medium sector was broadly consistent with the feedback from the major organisations. Unsurprisingly, small-to-medişs emphasised lack of resources, skills and capability as key issues.
Experience with the Victorian Collections (see Attachment 3, page 19 for a brief description of the Victorian Collections initiative) project indicates that when supported, the small to medium organisations are able to engage with digitisation and expand public access to their collections. In the past two years more than 300 smaller heritage and collecting organisations have uploaded metadata on over 60,000 items, generally accompanied by digital images. Through collaboration with the National Library of Australia, the Victorian Collections project provides a link for the small to medium sector to Trove (see Attachment 3, page 20 for a brief description of the Trove initiative).

The Victorian Collections model could be further developed and could be deployed in other states and territories to act as an aggregator making small to medium community collections more visible and accessible online.

4. Innovation in digital technology

The survey also canvassed the current use of digital technology by state-owned GLAM institutions.

Examples from across all jurisdictions demonstrated a wide variety of innovative ways in which institutions are currently using new technology to:

- extend access to collections
- target new audiences
- engage the public interactively with collections
- preserve and extend appropriate access to Aboriginal culture
- engage volunteers
- facilitate community engagement and collaboration
- target tourist audiences
- create engaging education program materials
- deepen engagement with collections
- use open-source resources and share data online.

A selection of examples provided in the survey is Attachment 4.

5. Key findings: survey and feedback

Feedback on digital activities in the major cultural institutions was based on the recognition of its importance for both access and preservation of collections. There was a strong commitment to increasing community engagement and open access to collection data.

Key issues identified included:

- the need for a national policy framework to facilitate collaboration and cooperation and to provide assistance in priority setting;
- strong support for cross-domain and cross-jurisdiction strategies and collaboration;
- the need to establish national standards based on international best practice;
- the need for collection digitisation activity to be embedded within organisations’ core activities rather than be an “add on”;
- the need to secure ongoing resources for digitisation in general, and digital access in particular;
- support for benchmarking data on digitisation, digital activity and audience reach;
- a commitment to sharing and building on existing infrastructure and knowledge to avoid duplication; in particular Trove being recognised as a national aggregator of Australian cultural collections, and the Atlas of Living Australia (see Attachment 3, page 21 for a
brief description of the Atlas of Living Australia) as a national aggregator for natural
history;
• identification of issues specific to the gallery sector which limit the integration of visual
arts collections within currently-used aggregators;
• recognition that some solutions, strategies and collaboration will need to be
discipline/domain based;
• discoverability being the key focus for metadata to facilitate open online access for the
public to Australia’s cultural collections;
• support for development of open data approaches and APIs to increase the amount of
machine readable metadata to make collection data more easily accessible;
• the need to address the barriers to greater access to digital data, such as copyright and
IP;
• the need to identify skills profiles, and ongoing training and support, required to support
and sustain digitisation activities; and
• the need for further research into innovative ways to increase access to digital content.

6. Future Actions/Opportunities

The work of the MCM Digital Technology Working Group, responses to the survey and
collaboration between the GLAM peak bodies have contributed to a shared understanding of
the current state of digitisation in the GLAM sector, and of the potential for further
development. There is a demonstrated need for and commitment to continuing collaboration
to realise the vision of seamless online access for the public to the rich diversity of Australia’s
collections.

The GLAM Peak Bodies met in June 2015 as the Digital Access Conversation and, at that
meeting, noted the need for national leadership in undertaking to work with government to
achieve this. The Digital Access Conversation has the potential to forge collaboration and to
undertake a central role in coordinating strategic planning and the implementation of digital
access initiatives.

Further action on extending digital access to our cultural collections is timely and should
include:

• the Digital Access Conversation facilitating a federated approach to development of
principles and a framework to expand and enhance digital access to collections;
• the development by each GLAM peak body, of a digital access strategy linked to the
national framework and set of principles; and
• investigation by peak bodies of options to facilitate digitisation of and digital access to
collections of small-to-medium organisations in State and Territory jurisdictions.

September 2015
### Major state-owned GLAM organisations who responded to the Digital Technology survey

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT Heritage Library</td>
<td>ACT</td>
</tr>
<tr>
<td>Araluen Arts Centre</td>
<td>NT</td>
</tr>
<tr>
<td>Art Gallery of NSW</td>
<td>NSW</td>
</tr>
<tr>
<td>Art Gallery of South Australia</td>
<td>SA</td>
</tr>
<tr>
<td>Art Gallery of WA</td>
<td>WA</td>
</tr>
<tr>
<td>Arts Centre Melbourne</td>
<td>VIC</td>
</tr>
<tr>
<td>Australian Centre for the Moving Image</td>
<td>VIC</td>
</tr>
<tr>
<td>Australian Institute of Aboriginal and Torres Strait Islander Studies</td>
<td></td>
</tr>
<tr>
<td>Australian Museum</td>
<td>NSW</td>
</tr>
<tr>
<td>Australian National Maritime Museum</td>
<td>Commonwealth</td>
</tr>
<tr>
<td>Australian War Memorial</td>
<td>Commonwealth</td>
</tr>
<tr>
<td>Carrick Hill</td>
<td>SA</td>
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<tr>
<td>History SA</td>
<td>SA</td>
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<tr>
<td>Museum and Art Gallery of the Northern Territory</td>
<td>NT</td>
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<tr>
<td>Museum Contemporary Art Australia</td>
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<tr>
<td>Museum of Applied Arts &amp; Sciences (Powerhouse Museum)</td>
<td>NSW</td>
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<tr>
<td>Museum of Australian Democracy at Old Parliament House</td>
<td>Commonwealth</td>
</tr>
<tr>
<td>Museum Victoria</td>
<td>VIC</td>
</tr>
<tr>
<td>National Archives of Australia</td>
<td>Commonwealth</td>
</tr>
<tr>
<td>National Film and Sound Archive of Australia</td>
<td>Commonwealth</td>
</tr>
<tr>
<td>National Gallery of Australia</td>
<td>Commonwealth</td>
</tr>
<tr>
<td>National Gallery of Victoria</td>
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<tr>
<td>National Library of Australia</td>
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<tr>
<td>National Museum of Australia</td>
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<tr>
<td>National Portrait Gallery</td>
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<tr>
<td>Northern Territory Archives Service</td>
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<tr>
<td>Northern Territory Library</td>
<td>NT</td>
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<tr>
<td>Public Record Office Victoria</td>
<td>VIC</td>
</tr>
<tr>
<td>Queensland Art Gallery / Gallery of Modern Art</td>
<td>QLD</td>
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<tr>
<td>Queensland Museum</td>
<td>QLD</td>
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<tr>
<td>Queensland State Archives</td>
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<tr>
<td>South Australian Museum</td>
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<tr>
<td>State Library of New South Wales</td>
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<td>State Library of Queensland</td>
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<td>State Library of South Australia</td>
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<td>State Library of Victoria</td>
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<td>State Library of Western Australia</td>
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<tr>
<td>Organisation</td>
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<td>State Records of South Australia</td>
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</tr>
<tr>
<td>Sydney Opera House</td>
<td>NSW</td>
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<tr>
<td>Tasmanian Archive and Heritage Office (TAHO)</td>
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<tr>
<td>Tasmanian Museum and Art Gallery</td>
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<tr>
<td>Territory Records Office / Archives ACT</td>
<td>ACT</td>
</tr>
<tr>
<td>Western Australian Museum</td>
<td>WA</td>
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</table>
GLAM Digital Technology Survey of Major Organisations: Recommendations

Across jurisdictions:

1. Implement a national standard and system for reporting on and benchmarking digital activities within publicly funded collecting organisations.

Across GLAM sectors through peak bodies and lead institutions:

2. Develop cross domain and cross jurisdictional digital strategies.

3. Engage domain peak bodies to develop greater sharing/standardisation of technical standards for
   - the creation and storage of digital assets;
   - descriptive metadata;
   - reporting and tracking collection items and metadata records online; and
   - discovery metadata.

4. Evaluate the efficiency and effectiveness of different digital distribution channels.

5. Further support API (Application Programming Interfaces) development for making collections data more easily available.

6. Develop and implement national cross domain procedural guidelines for the application of Creative Commons licensing as a preferred licensing option, unless special circumstances apply.

Within publicly-funded GLAM institutions

7. Encourage all collecting institutions to develop and report against a formal digital strategy and digital plan.

8. Encourage all collecting institutions to engage with or develop collaborative cross institution / domain / jurisdiction open data initiatives.

9. Implement uniform accessibility standards for collections content such as those from the World Wide Web Consortium (W3C).

Further investigation and work required

10. Undertake further research to establish how greater resourcing and increased innovation in increasing access to digital content can be achieved.

11. Undertake cost benefit analysis of opportunities for sharing skills and facilities across domains, and for more widespread outsourcing of collection digitisation; analyse investment required for shared systems and services.

12. Further identify the skills profiles required to support and sustain digitisation activities within cultural institutions and to provide ongoing training and support.
13. Further identify ways to increase the use of machine readable metadata.

14. Further investigate the accessibility of collections information made available online.

15. Undertake further research to identify:
   – utilisation of digital collections,
   – key markets and users,
   – barriers to access, and
   – reach and impact.
Respondents to GLAM Digital Technology Survey of Major Organisations

Australian Government Libraries Network
Australia ICOMOS
National and State Libraries Australasia
Australian Library and Information Association
Australian Society of Archivists
Council of Australasian Archives and Records Authorities
Council of Australian Art Museum Directors
Council of Australasian Museum Directors
Council of Australian University Librarians
Federation of Australian Historical Societies
Museums Australia
Digital Working Group NSW comprising:
  State Records NSW
  State Records, NSW
  Art Gallery of NSW
  Museum of Applied Arts & Sciences
  Museums and Galleries NSW
  Australian Museum
  State Library of NSW
  Museum of Contemporary Art
  Museums Australia NSW
GLAM Digital Access Conversation
Cultural Development Network
History Council of Victoria
Museums Australia (Victoria)
Public Galleries Association of Victoria
Regional Galleries Association of South Australia
Royal Historical Society of Victoria
TasTAFE Libraries
TAFE Queensland Libraries
Hunter Institute / TAFE Illwarra Libraries

GLAM Digital Access Conversation 12 June 2015: Participating Organisations

Museums Australia
Council of Australasian Museum Directors
Council of Australian Art Museum Directors
National and State Libraries Australasia
Council of Australian University Librarians
Australian Library and Information Association
Australian Society of Archivists
Council of Australasian Archives and Records Authorities
National Film and Sound Archive
Federation of Australian Historical Societies
National Research Collections Australia (Atlas of Living Australia)
National Library of Australia (Trove)
CSIRO (Atlas of Living Australia)
Museum Victoria (Victorian Collections)
Projects Demonstrating Excellence in Digital Innovation

Street History: Hoddles Grid iPhone app

Participating organisation: State Library of Victoria

This app presents the Library’s digitised collections in a manner which brings it to new audiences in a format that is familiar, accessible and interactive. The app uses geo-location to identify an individual’s location within the Melbourne CBD and shows a historical view of old city of Melbourne. The app includes more than 300 collection items of specific street addresses, street scapes and aerial views.

The project combines contemporary technology with the Library’s progressive digitisation programs to bring new life to the collection, increase awareness of collections and demonstrate the ongoing relevance of the Library to new user groups.

Target audience / community: students and schools, cultural tourists and urban history enthusiasts.

Demonstrating innovation in: mobile access to collections; use of geo-location; targeting CBD tourist audiences
Founders and Survivors

Held by the Tasmanian Archives and Heritage Office (TAHO), the records of the Tasmanian Convict Department are the most detailed descriptions of the bodies and lives of men, women and children created anywhere in the world in the 19th century.

No other settler society has such a record of their founders’ heights, eye colour, literacy, skills, family history, problems and temperament. 101,735 pages of records that document the 73,000 men women and children transported to Van Diemen’s Land (now Tasmania) were digitised and indexed in partnership with the University of Tasmania and the University of Melbourne.

Founders & Survivors has enabled the University of Tasmania to be the lead player in research in such fields as social history, medicine and criminology securing well over half a million dollars in research funding.

Spin-off projects and related work has included research initiatives of the Female Factory Research Centre; development by Roar Film of the highly valued Storylines and Mug Sheets curriculum resources; highly acclaimed Vandemonian Lags stage show at Dark MOFO in 2013 including sound track and DVD.

Target audience / community: historians, genealogists, demographers and population health researchers.

Demonstrating innovation in: collaboration in research; comprehensive digital access to a collection; community engagement.
SA History Hub and Adelaidia

Participating organisations: History SA

SA History Hub and Adelaidia websites, with the Adelaidia app present South Australian social history in a new, interactive, format. They are a unique combination of scholarly content and real-life connections to South Australia and Adelaide’s history.

The platforms allow people to browse historical topics online, contribute personal memories, upload historic images and to creating new records of Adelaide as it is today, preserved as tomorrow’s history bringing together historical information and online collections creating new links. These online platforms connect History SA with a new audience that may not necessarily interact through physical sites.

Adelaidia has been developed specifically with a younger audience in mind. Using the app people can access the history of Adelaide as they explore it physically. The augmented reality viewer enables users to browse Adelaide’s streets, places, and things through their in-device cameras.

Target audience / community: locals, students and tourists.

Demonstrating innovation in: facilitating community engagement with historical and academic content; targeting new audiences.
Ara Irititja

**Participating organisation:** South Australian Museum

Ara Irititja Ara Irititja means ‘stories from a long time ago’ in the language of Anangu (Ngaanyatjarra, Pitjantjatjara and Yankunytjatjara people) of Central Australia. The Ara Irititja project works with many Aboriginal organisations on the APY Lands to digitally preserve and repatriate artefacts, photographs, film footage and sound recordings that have been removed from the Ngaanyatjarra, Pitjantjatjara and Yankunytjatjara lands in Central Australia.

Many of these items are held in state and private collections. Archival and other collections have been digitised and made accessible to the community through digital archive workstations throughout the APY Lands, and in other appropriate places such as aged care facilities, schools and community centres.

Digital material is managed and made accessible using the Ara Irititja Knowledge Management System, which has been designed in consultation with the community to ensure that it is useful, and protects and manages their information in a manner that is culturally appropriate. The same software is used for recording and annotating the digital archive, helping the community collect, preserve and communicate cultural knowledge and history.

The project was initiated by Anangu elders and commenced as a social history project of the Pitjantjatjara Council in 1994. The South Australian Museum has provided support and formally managed the project in partnership with the community since 2007. Ara Irititja has also developed a number of educational resources; the software is used to help other communities develop their own digital archive, and has produced the multimedia educational program Ara Winki: Life on the Pitjantjatjara Lands.

Software also used by other institutions including Northern Territory Library.

**Target audience / community:** Ngaanyatjarra, Pitjantjatjara and Yankunytjatjara people of Central Australia.

**Demonstrating innovation in:** using digital technologies to preserve and extend access to Aboriginal culture.
Curio

**Participating organisations:** State Library of New South Wales

Devised with Art Processors—who created the ‘O’ for the Museum of Old and New Art (MONA) in Hobart—Curio transforms the way visitors explore, interact with and learn about the Library and its collections.

Easy to install on a range of mobile devices and available on in-house tablets, the app uses uniquely precise indoor location technology. As visitors move around the Library, it delivers targeted and relevant facts, surprising stories and multimedia about the Mitchell building’s architectural features and the objects on display in the galleries.

The mobile experience goes beyond the traditional audio guide, streaming information without disturbing the heritage building. It allows visitors to rate objects onsite, play back their visit at home and share their favourite objects on social media.

School groups can explore the Library’s exhibitions and the historic Mitchell building then return to the classroom and review their trip on Curio. The app is designed to provoke emotion, encourage thought and debate, and create a memorable experience which extends beyond the visit.

Curio was made possible with a NSW Government grant under the Collaborative Solutions program. It was supported by Samsung and Hewlett Packard.

**Target audience / community:** library visitors, students, tourists.

**Demonstrating innovation in:** use of geo-location to filter and target information for library visitors; rich and deep engagement with collections.
Field Guide app


In 2012 to 2014 museums around Australia collaborated on a project to create Field Guide apps for each State and Territory.

Funded by an Inspiring Australia Unlocking Australia's Potential Grant, the result was seven new Field Guide apps, plus a revamped Victorian Field Guide app, available for download for Apple and Android devices. The apps are free.

The project involved scientists around Australia writing species descriptions, sourcing images and sounds. Museum Victoria took the technical lead in producing the apps by continuing to develop the publishing platform—the open source Genera code.

Collectively the apps contain 2,105 species, 7,281 images and 270 audio files. Over 300 scientists, photographers as well as developers, designers and marketers contributed to the products.

Demonstrating that national collaborations can, indeed, be successfully delivered. The apps are highly rated in the App stores and attract extremely good reviews.

Target audience / community: students; community groups; local environmental organisations and many, many keen individuals.

Demonstrating innovation in: cross-jurisdictional collaboration; release of code as an open-source resource; engaging the community with natural science.
Victorian Collections

**Participating organisations:** Museum Victoria; Museums Australia (Victoria); National Library of Australia (Trove)

Victorian Collections is an online collection management system provided free of charge for use by collecting organisations across the state of Victoria in Australia.

Over the past three years, Victorian Collections has enabled volunteers and staff from 260 community organisations (including historical societies, RSLs and sporting clubs) to begin the process of digitising their collection information. Many hundreds of users have been trained in collection digitisation and documentation methodologies during the course of one hundred workshops held throughout the state.

These users have added around fifty five thousand cultural artefact records, including forty thousand images, and have begun to provide high-level descriptions of their collections. These numbers grow daily.

This project focusses on increasing skills, knowledge and professional standards in collections documentation for small museums. The technology, whilst also important, is one aspect of the project where people are at the centre.

Recently, arrangements have been made for Trove searches to harvest Victorian Collections records.

**Target audience / community:** community museum volunteers, tourists, local communities.

**Demonstrating innovation in:** facilitating community engagement, including culturally and linguistically diverse and veteran’s communities; enabling online, local communities to upload and make available key elements of their collection; cross-jurisdictional collaboration; use of collection-level descriptions.
The National Library of Australia and numerous State-owned institutions, community and corporate collections.

Trove is a gateway to the collections of contributing Australian galleries, libraries, archives and museums providing access to over 398,694,202 (total as at 10.58 am on 17/12 2014) Australian and online resources: books, images, historic newspapers, maps, music, archives and more.

Newspaper digitisation continues to drive Trove’s content growth. However, strong growth has also been achieved for most resource types, especially archived websites, pictures, music and sound. At June 2014, more than 54 ABC Radio National programs were available through Trove.

Small regional museum collections from across Australia have been added to Trove. Specialty collections are also represented, as well as corporate collections and legal collections.

Trove now has more than 131,000 registered users and averages 66,000 visitors each day, with much higher peaks (243,246 unique visitors on one day in May) when Trove content is posted by users on large social media sites. Trove users also enhance the service, contributing more than 50,000 lists and close to three million tags to date. Text correction by Trove’s digital volunteers has been valued at $22 million or more than 340 work years since Trove’s launch in November 2009.

**Target audience / community:** community members, researchers, students.

**Demonstrating innovation in:** extending access to collections; cross-jurisdiction collaboration; interactive engagement; community engagement.
**Atlas of Living Australia**

**Participating organisations:** wide-ranging participation from many organisations including: Australian Biological Resources Study (Parks Australia), Australian Museum, CSIRO (including Australian National Fish Collection, Australian National Insect Collection, Australian Tropical Herbarium) Museum, Victoria, Queensland Museum, Royal Botanic Gardens Melbourne, South Australian Museum, Tasmanian Herbarium, Western Australian Herbarium, Western Australian Museum, and other partners.

The Atlas of Living Australia is an Australian Government initiative, through NCRIS (National Collaborative Research Infrastructure Strategy). It brings together data from government departments herbaria, museums, universities and individuals, based on field observations, collected specimens and surveys, reflecting biodiversity in Australia and its region. Currently it contains more than 50 million occurrence records.

The Atlas provides powerful analytical and mapping tools for researchers seeking to understand biodiversity and environmental management issues. It also links to international data repositories placing Australia data into its global context.

Volunteers are encouraged to become engaged in citizen science projects that contribute to a better understanding of local, state and national biodiversity and environments.

**Target audience / community:** scientific and academic researchers, students; community groups; local environmental organisations and interested individuals.

**Demonstrating innovation in:** cross-jurisdictional collaboration; extensive use of open-source resources; provision of Application Program Interfaces (APIs) enabling a wide range of online sharing of data.
Biodiversity Heritage Library

Participating organisations: Museum Victoria; Atlas of Living Australia

The Biodiversity Heritage Library is an international project that aims to digitise and make freely available the full text of biodiversity-related literature.

The project was started by a group of libraries in museums and herbaria in the US and the UK. It has since become a global consortium with nodes in Europe, Egypt, China, South Africa, Brazil and Australia. It now provides access to over 40 million pages of digitised literature.

Concentrating initially on out of copyright works, but now incorporating in copyright works too, books and journals are scanned, uploaded to the Internet Archive, and made available through the Biodiversity Heritage Library website. Users include scientists needing historical information about species, distributions and taxonomy; artists; educators and students but it is also a fascinating site for anyone interested in natural history or rare books.

Museum Victoria is the lead agency for the Biodiversity Heritage Library in Australia, on behalf of the Atlas of Living Australia. This project demonstrates excellence in many ways.

The fact that project participants have successfully initiated scanning operations at libraries, across countries and continents attests to the strength of both the project and the collaboration. The project is also now a founding member of the Digital Public Library of America.

Rather than designed to support a visit to a physical GLAM venue, the Biodiversity Heritage Library provides access to digitised literature wherever the user is in the world.

Target audience / community: international educators, researchers, students, artists.

Demonstrating innovation in: international collaboration; expanding access to collections.
Generator

Participating organisations: Australian Centre for the Moving Image

The Australian Centre for the Moving Image (ACMI) has developed Generator, a virtual creative studio and resource website for students and teachers to explore, share and create moving image works. Generator provides innovative opportunities for learners to maximise their understanding of Australia’s screen industry and production processes, as well as providing access to a significant archive of moving image work.

A key component of Generator is the Video Gallery, which comprises hundreds of diverse individual stories that can be rated, shared via email and social media, selected as favourites, commented on, tagged and downloaded. The Free Media Library consists of thousands of individual copyright free items (video, images and audio files) that are able to be downloaded, re-used, adapted, remixed, mashed up and republished for educational purposes.

Students can choose from over 90 individual professionally created storyboard cells and create a storyboard for three genres of script (horror, comedy and romance). Alternatively students can upload their own images. The storyboard can be published as an animatic and saved, shared, embedded and linked to by the user.

Generator is supported by Educators Lounge, where teachers can explore the theory and practice of digital technologies and the ways in which they intersect with existing and emergent classroom practice.

Underpinning Generator is support for educators and students to assist them to understand and make appropriate choices in relation to ethics and laws, particularly with regard to copyright. Clear labelling and direction is provided throughout the site along with plain English explanations and support materials related to key issues such as appropriation and rights, and the range of licences (from most accommodating to most restrictive) creators can choose to apply when publishing their work.

Target audience / community: students, teachers.

Demonstrating innovation in: education in screen industry and production processes including legal concepts.
Dinosaur Discovery—Phone and Tablet App

Participating organisations: Western Australian Museum

The Dinosaur Discovery augmented reality app allows visitors to see 3D renders and animations of dinosaurs in various contexts, such as on exhibition catalogues so they can see dinosaurs they are reading about, on exhibition panels, or even outside the exhibition as they walk towards the museum.

Target audience / community: students.

Demonstrating innovation in: use of augmented reality.
DigiVol

Participating organisations: Australian Museum, Museum Victoria

DigiVol is the world’s leading Volunteer based Digitisation program. Started in 2011, it has established its credentials as an innovative and successful example of citizen science that engages the community by inviting them in to work on digitising the collections of the Australian Museum and other collection based institutions from around the world such as the Smithsonian and Kew Gardens.

The DigiVol program is made up of two components: DigiVol Lab where around 70 volunteers a week image specimen labels and archival documents onsite at the Australian Museum; and DigiVol online where online volunteers transcribe the text from the images taken in the DigiVol lab. The DigiVol workflow has incorporated comprehensive quality assessment to ensure the resultant data quality is as good as or better than that from more traditional data capture digitisation programs.

To date DigiVol has seen more than 10 institutions from around the world including the Smithsonian, Kew Gardens, New York Botanic Gardens, Biodiversity Heritage Library through Harvard University, Hawaii University, Museum Victoria use DigiVol Online to transcribe items from their collections.

At 16th January 2015 DigiVol Lab has seen 270000 images of collection objects captured by volunteers. DigiVol online has seen 841 volunteers capture over 128700 tasks (tasks vary from small specimen labels of a few words to double page handwritten diary pages) completed.

Target audience / community: volunteers.

Demonstrating innovation in: engagement of volunteers.
Gordon Hookey: Kangaroo Crew

Participating organisations: QAGOMA (Queensland Art Gallery | Gallery of Modern Art) with the artist Gordon Hookey

The QAGOMA Children’s Art Centre is a leader in developing interactive projects, activities and publications for children and families. Through collaboration with artists it has also developed a large quantity of innovative and engaging multimedia activities for children.

In 2013 at GOMA, the Children’s Art Centre presented ‘Kangaroo Crew’, an interactive artist project created for children and families by Indigenous Australian artist Gordon Hookey, from the Waanyi people, based on his story ‘The Sacred Hill’. Children were able to engage with the story through two multimedia activities:

In Kangarcade, children help the members of the Kangaroo Crew reach the top of the sacred hill through a fun retro-inspired game. The activity featured push-button and joystick controls and was housed in custom-designed arcade-style joinery.

In You Roo, children designed a poster that was personalised with their own photo. The posters were featured on a gallery wall with 18 screens featuring the most recent contributions. They could also be shared with friends and family via email and social media.

A high level of design and refinement was invested into the physical integration of the multimedia within the exhibition space. Both multimedia projects proved tremendously popular with visitors, and were subsequently shown in Auckland as part of a tour of the Gallery’s contemporary Indigenous Australian art collection.

Target audience / community: children, families.

Demonstrating innovation in: digital in-space audience engagement
Museum robots: Kasparov and Chesster

Participating organisation: National Museum of Australia; Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia’s Academic and Research Network (AARNet), and the Commonwealth Department of Communications

Kasparov and Chesster are two of the National Museum’s newest employees. Their job is to give people from around the world access to laser-guided virtual tours of the Museum. Robot tours allow the remote visitor to control the view of the displays and galleries via the panoramic camera on each robot, and to talk with a tour guide.

A virtual visitor can:

- Control their own view of the galleries—zooming and panning to look where they like, at what they find interesting.
- Discover digital content about objects on display—with hidden images and videos throughout the galleries, exclusively available for virtual guests.
- Respond to and ask questions of the tour guide—all through a web-browser.

Robot tours have been used for schools, community groups, libraries and for staff meetings. Facilities that a group, class, or organisation needs are a broadband internet connection, a webcam, and a microphone.

The Museum robots project is the result of a partnership between the National Museum, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia’s Academic and Research Network (AARNet), and the Commonwealth Department of Communications.

Target audience / community: students and schools, community groups.

Demonstrating innovation in: remote interactive access to collections.