Dublin Core at the National Library Board Singapore
AGENDA

• Introducing NLB
• Use of DC within NLB – NLB Application Profile@work
• Collaboration with libraries and public agencies
• DC in Linked Data and future plans
WHO ARE WE

• National Library Board Singapore oversees the Public Libraries, National Library and National Archives

Public Libraries
• Network of 27 Libraries
• Reading Programmes and Initiatives
• Programmes and Exhibitions targeted at Singapore communities

National Library
• Preserving Singapore’s Print and Literary Heritage, and Intellectual memory
• Reference Collections
• Legal Deposit (including electronic)

National Archives
• Custodian of Singapore’s Collective Memory
• Responsible for Collection, Preservation and Management of Singapore’s Public and Private Archival Records
• Promotes Public Interest in our Nation’s History and Heritage
WHO ARE WE

Through the years, NLB has continually advanced ourselves through systematically rethinking our roles and following through with plans based on our strategic blueprints.
FORMALISATION OF DC WITHIN NLB

• NLB adapted the DC-Libraries Application Profile which was implemented in 2004.

• Review of the document, which is referred to as NLB-AP, is done once in two years.

Guide to staff on how to create metadata for digital collections

Ensures consistency in application of cataloguing standards

Serves as basis for crosswalk from other metadata standards
USE OF DC WITHIN NLB

- A cataloguing editor was developed in-house in 2004, for data input into the Content Management System.

- Used for cataloguing of all digital objects such as ebooks, images, digitised manuscripts and archived websites.

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**Example of a record created using NLB-AP**

**Title**
A beachcomber in the Orient

**Creator**
Foster, Harry L. (Harry La Tourette), 1894-1932

**Subject**
- East Asia—Description and travel
- Southeast Asia—Description and travel
- Sports, recreation and travel
- Travel
- Asia

**Publisher**
J. Lane, Bodley Head, 1923

**Table of Contents**
- ch. 1. The fool-killer strikes
- ch. 2. In the Paris of the jungle
- ch. 3. Up the Mekong to Prom Penh
- ch. 4. Through Cambodia by sampan
- ch. 5. Hitting the trail with Henri
- ch. 6. Overland through Slam
- ch. 7. The city of the great white angels
- ch. 8. By freight car to the Malay States
- ch. 9. On the beach, in Singapore
- ch. 10. In a waterfront grog-shop
- ch. 11. By cargo boat to the Philippines
- ch. 12. A tourist in Japan
- ch. 13. Sing-song and opera in Shanghai
- ch. 14. The nightmare city of Canton
- ch. 15. Back to Hong Kong.

USE OF DC WITHIN NLB

There are currently six microsites accessible by public that is using the NLB-AP covering:

- Websites (WAS)
- Historical content (HistorySG)
- Digitised and digital books (BookSG)

- Performing, literary and visual arts (NORA)
- Musical content such as scores, lyrics, etc (MusicSG)
- Images, photographs and artworks (PictureSG)
**NLB’S INTEGRATED SEARCH SERVICE - ONESEARCH**

- OneSearch is an integrated search service launched in 2014 and is Singapore’s first search platform for seamless discovery of our Galleries, Libraries, Archives & Museums (GLAM) materials.

- Since then, more libraries and institutions have joined OneSearch to improve their resource discoverability.

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**With OneSearch, users only search once**

**One Search, many sources.**

- **Facets extracted from NLB-AP**
  - **Books**
    - Images at the margins: a collection of Koo Pau Kiu’s plays / Koo Pau Kin
  - **Facets extracted from NLB-AP**
    - **Subject**
      - Descentants of the exarch admiral: and the spirit play / by Kao Pau Kiu, edited by C.J.W. L. Wee and Lee Chien Hong
        - Contains a collection of souvenier publications, programmes, brochures and pamphlets pertaining to this ...
  - **Contributing Agencies**

**Display of search results**

- **Bento-boxes**
  - Magazines & Articles
    - 13 records found
  - Audiovisuals
    - 70 records found
  - Images
    - 24 records found
  - Newspapers
    - 2,375 records found
  - Records & Papers
    - 135 records found
  - Websites
    - 8 records found
  - Physical Objects
    - No records found
  - eJournals
    - 14 records found
Different Cataloguing Standards used

- MARC21 to describe textual/physical collection – used by libraries
- International Standard Archival Description (ISAD-G)—used by archives
- Categories for Description of Works of Art (CDWA)—used by museums

NLB adopted Dublin Core as the crosswalk standard

- Source schemas are aligned by converting them to Dublin Core
- Vocabularies were mapped in order to standardise terms

CDWA to NLB-AP

<table>
<thead>
<tr>
<th>CDWA</th>
<th>Dublin Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permalink</td>
<td>dcterms:identifier</td>
</tr>
<tr>
<td>Object name title</td>
<td>dcterms:title</td>
</tr>
<tr>
<td>Credit Line</td>
<td>dcterms:provenance</td>
</tr>
<tr>
<td>Artist/Participant</td>
<td>dcterms:creator</td>
</tr>
<tr>
<td>Accession no.</td>
<td>dcterms:sourceOfAcquisition</td>
</tr>
<tr>
<td>Label text</td>
<td>dcterms:description</td>
</tr>
<tr>
<td>Dating</td>
<td>dcterms:created</td>
</tr>
<tr>
<td>Geographic assoc</td>
<td>dcterms:coverage</td>
</tr>
<tr>
<td>Container</td>
<td>OneSearch:container</td>
</tr>
<tr>
<td>Category (Object Type)</td>
<td>dcterms:type</td>
</tr>
<tr>
<td>Subject</td>
<td>dcterms:subject</td>
</tr>
</tbody>
</table>

Uncontrolled Term (Object Type) | Controlled Term
--- | ---
Installations | Installation Art
Other metals | Metalwork
Bronze | Bronzework
Silver | Silverwork
Garment & Accessories | Costume
Implements & Tools | Cultural artefact

Standardisation of Object Types

Results on OneSearch

Linked to GLAMs
COLLABORATION WITH NATIONAL UNIVERSITY OF SINGAPORE (NUS) LIBRARIES DIGITAL GEMS

- Digitised rare collection of NUS Libraries
- Since June 2021, a total of 19,253 records across 20 collections have been mapped to DC and ingested
- **50% increase in usage** of materials after making the resource discoverable on NLB’s OneSearch

### Data Mapping/Ingestion

<table>
<thead>
<tr>
<th>DC Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dc:type</td>
<td>Content Type</td>
</tr>
<tr>
<td>dc:subject</td>
<td>Subject</td>
</tr>
<tr>
<td>dc:creator</td>
<td>Author/Creator</td>
</tr>
<tr>
<td>dc:title</td>
<td>Title</td>
</tr>
<tr>
<td>dcterms:created</td>
<td>Publication Date</td>
</tr>
<tr>
<td>dcterms:abstract</td>
<td>Abstract</td>
</tr>
<tr>
<td>dc:identifier,xsi:type=&quot;nib:terms:uuid&quot;</td>
<td>Empty (NLB assigned)</td>
</tr>
<tr>
<td>dc:identifier,xsi:type=&quot;nib:terms:accessionNo&quot;</td>
<td>Item ID</td>
</tr>
<tr>
<td>dc:description</td>
<td>Description</td>
</tr>
<tr>
<td>dcterms:isPartOf,xsi:type=&quot;nib:terms:collections&quot;</td>
<td>[Default: NUS Libraries]</td>
</tr>
<tr>
<td>dcterms:language</td>
<td>Language</td>
</tr>
<tr>
<td>dc:creator</td>
<td>Publisher</td>
</tr>
<tr>
<td>dcterms:rightsHolder</td>
<td>Empty</td>
</tr>
<tr>
<td>dc:coverage</td>
<td>Spatial Coverage</td>
</tr>
</tbody>
</table>

**NUS Libraries**

asklib@nus.edu.sg

NUS Digital Gems
In 2017, Singapore Government created LifeSG App for whole-of-government citizen services.

LifeSG App

NLB created:
- A LifeSG Application Profile based on Dublin Core
- LifeSG Faceted Taxonomy comprising of topics, target audience groups and content types

Faceted Taxonomy
DC IN LINKED DATA

- NLB began **Linked Data** work in 2014 to enhance discoverability of resources:
  - Adopted BibFrame v1.0 ontology
  - Converted Authority Files, DC and MARC21 to RDF
  - Performed Named Entity Recognition to extract entities from unstructured data
  - Marked-up websites, DC and MARC21 records with Schema.org for Google crawl

*Includes crosswalked Libraries, Museums and Archives records
**NER extraction from Unstructured Data (e.g. articles)
CONTINUING WORK: METADATA TO LINKED DATA

Datasets published as Linked Open Data (Jul 2016)

Open Data
Share bibliographic and authority data for external parties to develop applications

Knowledge Panel on OneSearch (Nov 2016)

Entity Data
Bite-sized information about personalities, places and organisations

HistorySG (Jan 2017)
Infopedia (May 2017)

Linked Data Widget
Information about personalities, places & organisations linked to relevant content via RDF

Schema.org Markup for Websites & Collections (2019)

Schema.org
Add semantic description for search engines to understand and discover resources

Discovery Interface
Update ontology to BibFrame v2.0, Knowledge Cards, Semantic Search, Links to Wikidata, etc.

Work In Progress

Linked Data Catalogue
Thank you