DIGITISATION IN ARTS & CULTURE

Roger Layton, The ETHER Initiative : www.ether.co.za
South African Cultural Observatory Conference, Port Elizabeth
16-17 May 2016

Policy needs to be extended to accommodate arts, culture, and the sciences.

Selected policy statements are discussed.

Two situations are covered in more detail
- Personal Digital Archives,
- Museum of Mathematics.

Conclusion and Discussion:
- Our research work in arts, culture, and heritage
- Key issues for the future of digital culture.
- Implementing the National Policy
THE DIGITAL TSUNAMI

Key trends
- Ubiquity of technology
- Unbounded range applications
- Unquestioned trust in search results

Key challenges
- Uncontrolled technology advances
- Data locked in institutions — not open and shared
- Lack of guidance
FUTURE THREAT:

ARE WE CREATING THE DIGITAL DARK AGES?
POSITIONING OURSELVES INTO THE HISTORY OF RECORDED INFORMATION

20,000BCE 3000BC 800 1450 1940 1980 1990 2010 2020 2100/2300

symbols
writing

Baghdad human scribes bookshops

Guttenberg

printing press

Personal Computer

IBM

Electronic / Digital Computers

Turing

Internet Web
Mobile phones

Cloud Storage Tablets Social Media

????

Wearables IoT AI

5
DRAFT NATIONAL POLICY ON DIGITISATION: 2011

Policy
- 27 policy statements
  - Strategy
  - Repository
  - Contracts
  - Access
  - Preservation
  - Metadata

Mechanisms
Implementation recommendations and interventions

Digital Heritage
Body of Knowledge (DHBOK):
Best-practice framework to create a Digital Institution in line with policy

Created by Roger Layton Associates for the Department of Arts & Culture (2009-11)
Selection from the 27 policy statements

Focus on Heritage – archives / libraries / museums

Policy 1: All institutions MUST create and publish the digitisation strategy – template provided.

Policy 13: Create National Digital Repositories (NDRs) – as the trusted and sustainable legal depositories of digital content.

Policy 15: Protect the digital heritage.

Policy 22: Create the Institute for Digital Heritage (IDH) as the professional community of practice.

Policy 26: Promote Research and Development in Digital Heritage.
ELEMENTS OF THE DIGITAL HERITAGE BODY OF KNOWLEDGE
## PARTICIPANTS, PROCESSES, PRODUCTS

<table>
<thead>
<tr>
<th>participants</th>
<th>processes</th>
<th>products / practices</th>
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<tr>
<td>Custodian</td>
<td>Scoping</td>
<td>Audit, Status Quo, Digital vision, Gap analysis</td>
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<td></td>
<td>Strategising</td>
<td>Digitisation strategy: Programmes/Projects/Plans</td>
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<tr>
<td></td>
<td>Planning</td>
<td>Project plans: Deliverables, Resources, Schedules</td>
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<tr>
<td>Producer</td>
<td>Preparing</td>
<td>Project start-up: facilities, resources, in-process</td>
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<td></td>
<td>Capturing</td>
<td>Digital objects: reproductions, administrative records, born digital</td>
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<td></td>
<td>Describing</td>
<td>Metadata: context, creation, preservation, …</td>
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<tr>
<td>Repository</td>
<td>Loading</td>
<td>Digital masters, digital provenance, Identification/naming</td>
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<td></td>
<td>Storing</td>
<td>Digital repositories: long-term preservation, reformatting</td>
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<tr>
<td>Consumer</td>
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<td>Search requests / results / user interfaces</td>
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<td></td>
<td>Using</td>
<td>User content, fair use, licensing, repackaged products</td>
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EXTENDING DIGITISATION POLICY TO ARTS, CULTURE, SCIENCE, ETC.

EXTEND TO ALL DOMAINS IN THE “FRAMEWORK FOR CULTURAL STATISTICS” (FCS):
- Cultural (incl. Museums)
- Performance
- Visual Art
- Published Works
- Audio-Visual
- Design
- Tourism
- Sports & Recreation

EXTEND TO DOMAINS BEYOND CULTURE:
- Science: Research data vs. research publications
- Humanities
- Education
- Engineering
EXPLORING TWO CASES...

Personal Digital Archives

(Virtual) Museum of Mathematics
PERSONAL DIGITAL ARCHIVES: CHALLENGES

HISTORICAL PERSONAL ARCHIVES:
- handwritten letters and diaries
- photographs
- audio cassettes / video cassettes

MODERN PERSONAL ARCHIVES:
- email archives
- multiple stores (memory stick, old computers, old storage media)
- multiple copies of same files – different versions
- may ALL be lost if not managed at time of creation
PERSONAL DIGITAL ARCHIVES: RISKS

- ageing hardware / media / formats
- media failure – cannot read
- format failure – cannot interpret / render
- loss of cloud-based host (remember GeoCities? MySpace?)
- loss of prior knowledge about organisation of files / emails
- digital archives stored everywhere – Facebook / multiple email addresses / cloud storage / own files / various backups….
- may be encrypted but no key available.
YOUR OWN DIGITAL ARCHIVES

When you are gone what do you want to happen to your digital archives:

1. destroy them all
2. allow these to be used by anyone / or selected group of people
3. provide them to an archival organisation

HOW to tell others what to do with your digital legacy?
So what should WE be doing NOW?
The Challenge of Mathematics Knowledge

Where is mathematics knowledge located?

Why is South Africa among measured as the worst in the world for mathematics education?

What knowledge and in what form will help?

How can we best protect mathematics knowledge for future generations?

Is a museum the right vehicle? Why not just a web site?
<table>
<thead>
<tr>
<th>Collections</th>
<th>Types of Objects</th>
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<tbody>
<tr>
<td><strong>Physical Objects/ Teaching Aids</strong></td>
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<td>Calculation</td>
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<td>Rulers</td>
<td>Objects in other museums.</td>
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<td>Shapes</td>
<td>Measuring instruments</td>
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<td>Use of mathematics</td>
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<td>Measurements</td>
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<td>Sizes of computer memory: KB, MB, GB, TB, PB, EB, ZB, YB</td>
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<tr>
<td>Shapes</td>
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<td>Euclidean Solids</td>
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<td>Oral history recordings</td>
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<td>Geodesic domes</td>
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<tr>
<td>Indigenous mathematics</td>
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<td>Patterns used on baskets, textiles, houses</td>
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<tr>
<td>Link to indigenous collections and architecture</td>
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<td>Counting in different languages and cultures</td>
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<td>Use of mathematics</td>
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<td>Square Kilometre Array</td>
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<td>Big Data</td>
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<td>Transport Architecture</td>
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<tr>
<td>TV Series and Movies</td>
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<tr>
<td>Good Will Hunting</td>
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MATHM 2014.10: Brunsviga Trinks Calculator. c. 1910

Accession number is unique across institutions.


**OUR RESEARCH ACTIVITIES**

**African Digital Library (current):** how to create a centralised body of knowledge of all arts, culture, heritage and science for South Africa, and perhaps Africa as a whole. (self-funded)

**Museum of Mathematics (current):** a virtual museum to enhance the teaching and learning of mathematics. (self-funded).

**Museum Website Maturity Study (current):** how well are museums exploiting the web for promotion and sharing of their content.

**AI-based Collection Management System:** a universal collection management system for all forms of collections (self-funded).


**National Art Bank for South Africa (2013-14):** Defining the institutional framework and operational structure to promote the economic opportunities for young artists.
CONCLUSION / DISCUSSION / CALL TO ACTION

TAKE RESPONSIBILITY: Is it **OUR** generation’s responsibility to manage the transition from physical to digital.

GET THE POLICY IMPLEMENTED: The absence of agreed policy will create silos and incompatibilities which will live with us for generations.

BUILD THE NATIONAL DIGITAL REPOSITORIES: Digital repositories are very expensive to build and maintain – this should be a core function of the government.

PROVIDE ACCESS TO DIGITAL CONTENT: Through a National / African Digital Library.

ENSURE THAT ALL INSTITUTIONS BECOME DIGITAL: To share their content as widely as possible – Open Data.