

THE DRAFT NATIONAL POLICY ON DIGITISATION AND INSTITUTIONAL CAPACITY BUILDING

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Wits-NRF Digitisation Capacity Development Initiative
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DRAFT NATIONAL POLICY ON DIGITISATION / INSTITUTIONAL CAPACITY DEVELOPMENT. DR ROGER LAYTON. ROGER@RL.CO.ZA

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This talk is a part of the workshop organised by the Wits-NRF Digitisation Centre, on the occasion of the launch of this centre. The day included a number of talks as well as a walk-through of the centre, seeing the training facilities, the equipment available, and the current work underway.

Dr Roger Layton has spent almost 50 years in the ICT field, specialising in software development, artificial intelligence, education (esp. mathematics education), heritage, digital heritage/digitisation, as well a strong interest in local economics and social transformation.

He is the CEO of RLA, and also the founder of the ETHER Initiative, which is focused on Eternal Heritage through digitisation and through physical preservation.

QUESTIONS ON CAPACITY DEVELOPMENT

WHAT WAS **RECOMMENDED** IN 2011 WITH THE DRAFT NATIONAL POLICY ON DIGITISATION?

ARE THE 2011 RECOMMENDATIONS **RELEVANT TODAY**?

WHAT ARE THE **EMERGING NEEDS** OF THIS GENERATION?

WHAT ARE THE **DIMENSIONS AND SCOPE** OF “CAPACITY”?

WHO SHOULD BE DEVELOPING WHAT **TYPE OF CAPACITY**?

HOW SHOULD CAPACITY BE DEVELOPED?

This talk concerns Capacity Development at the institutional level.

This was covered extensively within the Draft National Policy on Digitisation which was developed by RLA and its associates under the leadership of Dr Roger Layton.

These questions pose a reflection on what was done in 2011, and whether these remain relevant, and the new needs which have occurred in the intervening time. As a part of this I define the notion of “capacity” and “capacity development” and then ask the follow-on questions as to which institutions should be developing what capacity, and also how this should be done. This talk ends with a Call to Action.

WHERE WE FIT

Data Models

Universal Semantic Data Models
Meta-metadata
Layered Metadata Models

National Projects

SA Heritage Resource Info Sys
National Policy on Digitisation
National Art Bank
Heritage Building Guidelines
Guidelines for Built IKS

The ETHER Initiative – ETERNAL HERITAGE

Collection management
Education
Governance
User Experience
Conservation
Digitisation

Contributions to Standards

SPECTRUM 5 – Collections Trust
Open Data in a Big Data World – Science
International
Europeana Inside – Rapid Ingestion

The ETHER Initiative is a business unit / programme of Roger Layton Associates. The word ETHER is drawn from two other words ETernal HERitage, where ether is also considered to be the essence of everything, which binds the others together. Ether is the hidden, intangible structure of our universe. So our name ETHER has multiple meanings. We can be found at ETHER.CO.ZA.

Our contributions are guided by the leadership of Dr Roger Layton and include work in a number of areas of heritage:

- Data Modelling: creating a range of universal data models for heritage, such as that created for SAHRA in 2006 as the Data Coding Standard for Heritage. ETHER has since developed further data models and built these into XML-based, cloud-based, frameworks and systems for the storage of data-bases and digital heritage information and objects.
- We have been engaged in a number of key national projects – including the National Policy on Digitisation, and the more recent work on IKS in the Built Heritage for the Department of Public Works.
- We have contributed for a number of standards and international projects, including Europeana.
- We divide our work in ETHER into 6 units covering collection management guidelines and systems, using our ETHER-Base system, education in a range of courses and workshops; governance of institutions including the development of policies,

guidelines, and models; improving user access to collections through web sites; supporting conservation of physical collections; and digitisation support.

BUSINESS CASE FOR A NATIONAL POLICY?

NEEDS

preservation
access
foreign-funded
projects

BENEFICIARIES

the entire country
the national memory
universities/research institutions
secondary/primary educations
interested parties/tourists
future generations

The National Policy was based on three initial core needs : preserve the national memory in digital form; provide access to this digital heritage; and control foreign funded projects. Further needs were identified during the research phase.

The beneficiaries were identified for both current and future generations of users, or all types, since everyone needs access to the digital memory.

The national policy was developed based on research, and among the research methods was scenario planning using science fiction literature to inform our view of possible futures.

SCOPE OF POLICY

Original Scope = Heritage

National Museums
National Archives
National Library

Proposed Scope = Inclusive

Research Data / Outputs
Scientific/Environmental/etc.
Arts/Culture
Government Data Sets
Non-government Data Sets

ANYTHING with ENDURING VALUE
Archives / National Library

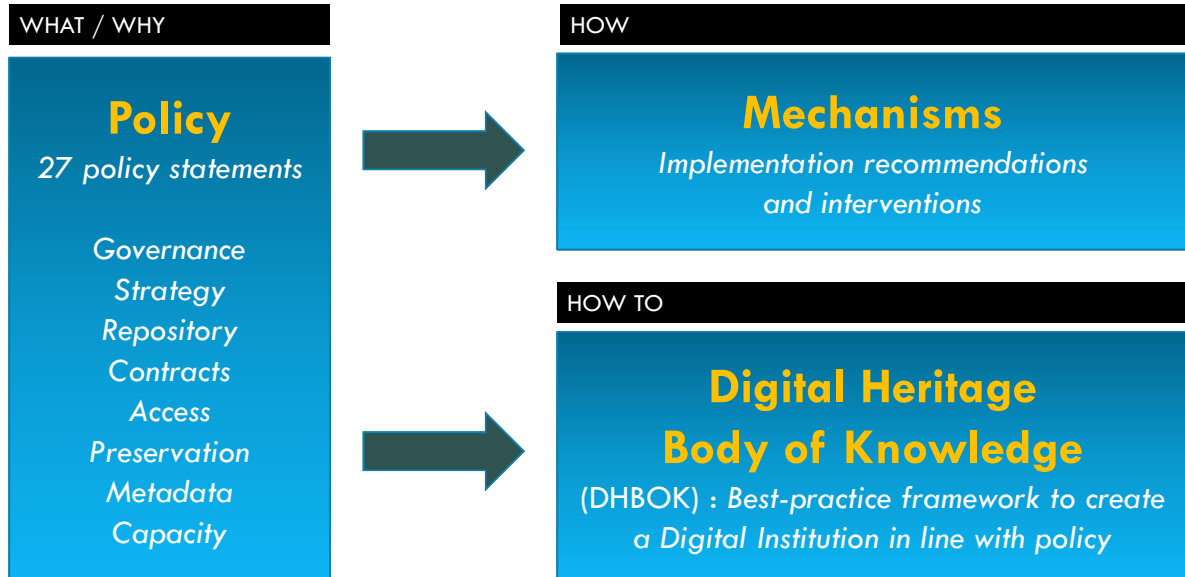
National Custodians?

DAC? DST? DOC?
Who should be the government body responsible for
digital heritage?
Or should this be located outside of government?

The original scope of the policy was on the national institutions on archives, libraries and museums (including galleries).

It is proposed that this policy be extended to include all institutions which capture and store digital objects (of all forms, including data sets) for their enduring value into the future. This would also extend the custodianship of the policy to include at least DST and DOC, and this was identified as a key element of the 2011 policy framework, identifying how this interaction should occur. At the consultative workshop on Feb 2011, the DGs of DAC, DST, and DOC was in attendance.

STRUCTURE OF THE DRAFT NATIONAL POLICY



The policy was structured as a core document, outlining the 27 policies, and also providing the background, motivation, and the research which led to these policy statements. This answers the question (WHAT and WHY).

The remainder of the policy was structured into 8 appendices, of which one concerned the Implementation Mechanisms (HOW), and the body of knowledge (indicating HOW TO).

POLICY STATEMENTS SPECIFIC TO CAPACITY DEVELOPMENT



Policy 22 : Creating a **Community of Practice** - the **Institution of Digital Heritage (IDH)**

Policy 23 : Developing and implementing a **Skills Framework for the Digital Heritage.**

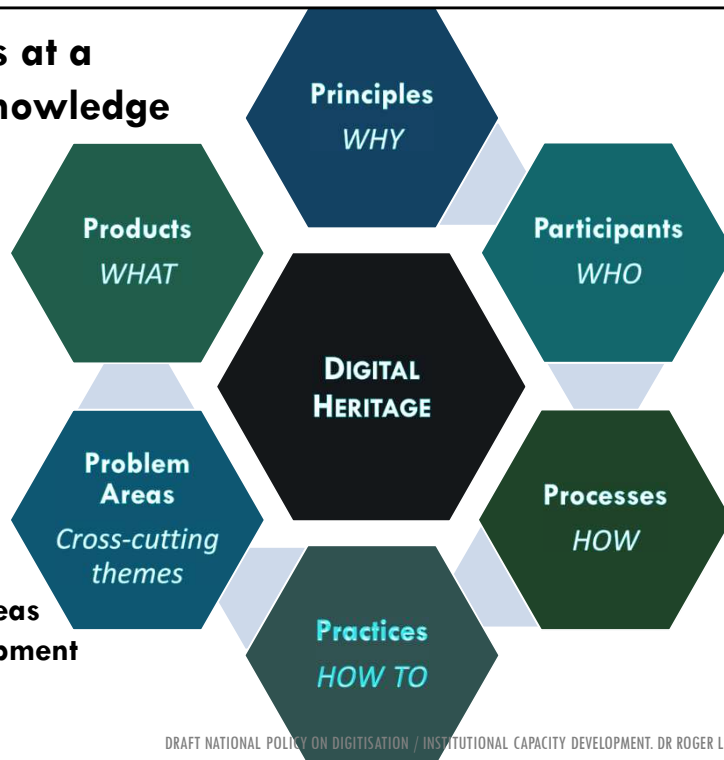
Policy 24 : **Develop and Measure Institutional Capacity**

Policy 25 : NARS to take lead for **capacity development in Electronic Records Management**

Policy 26 : Promote **Research and Development**

Of the 27 policy statement, 5 were directly concerned with Capacity Development, although every one of the policy statements has some element of development.

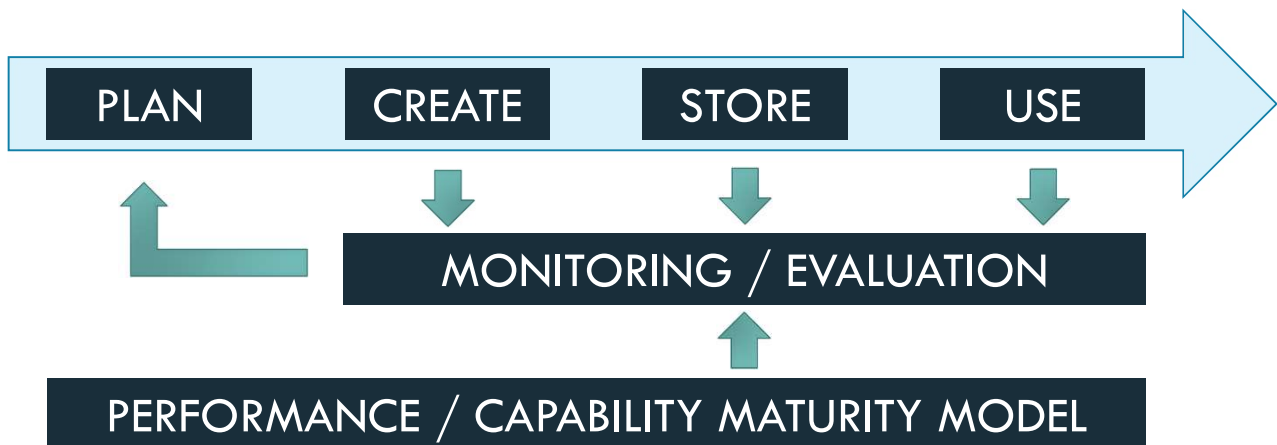
A first pass at a Body of Knowledge



Helps to identify areas
for capacity development

The proposed Body of Knowledge for the Digital Heritage is structured into six parts, and these are seen as threads which combine to ensure best practices are done in all digitisation initiatives.

HIGH-LEVEL PROCESS MODEL

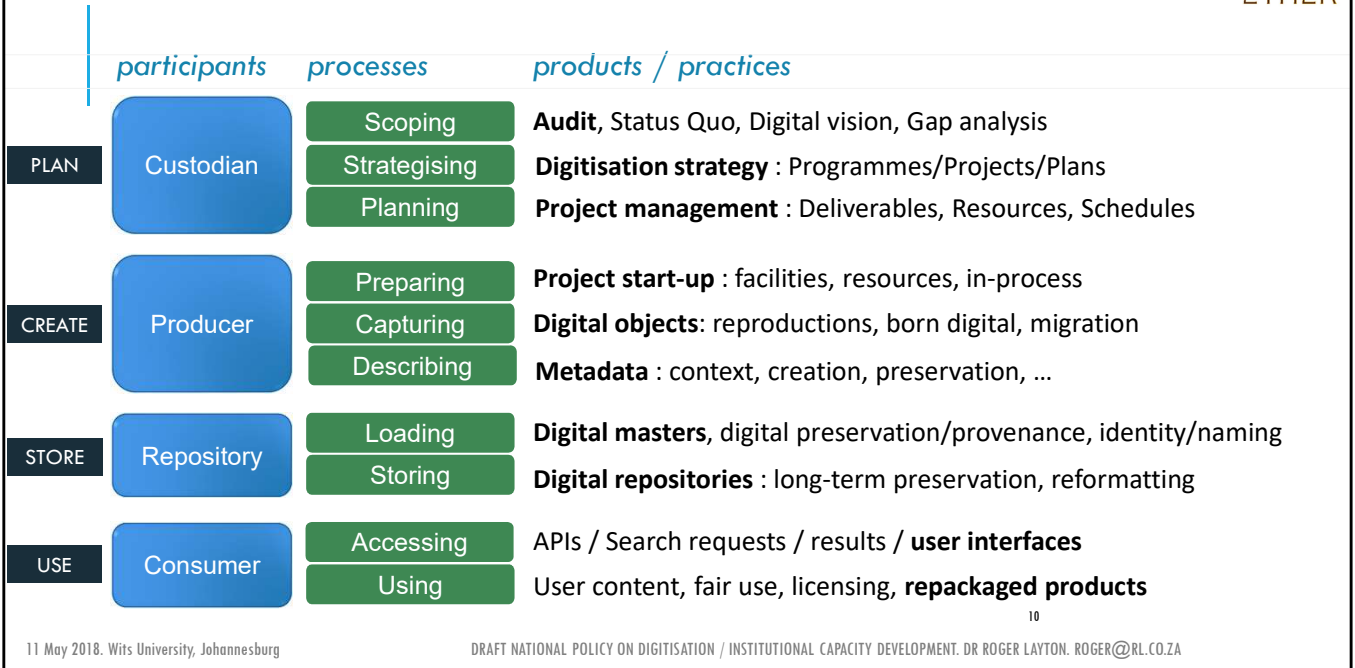


The process model proposed was based on the prior work of RLA in the time leading up to the national policy, and this has been included within the policy framework, and has also been extended by RLA in the meantime.

The modern approach which RLA has developed, beyond the original policy, structures the processes into five key processes: Planning, Creating, Storing, Using, and Monitoring, using a capability maturity model to support the understanding of performance.

This model is then extended to the Ten Process model which explores the life cycle of digitisation, with regular evaluation and planning to improve creation, storage and usage of the digital objects.

PARTICIPANTS, PROCESSES, PRODUCTS



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This slide has been used in every presentation I had made on Digital Heritage over the past 12 years, and has been modified and extended as required.

This provides the roadmap for how the key elements work together, including how the individual processes produce products, under the management of specific participants. Every part of the policy can be related back to this model.

MECHANISM 1 THE INSTITUTE FOR DIGITAL HERITAGE

- ❖ Community of practice as the professional body for digitisation practitioners
- ❖ Develop and publish the Body of Knowledge
- ❖ Develop and promote national standards and vocabularies
- ❖ Mentoring, monitoring, guidance
- ❖ Specialist unit for near-obsolete technologies
- ❖ Annual skills audit
- ❖ Support institutional capacity measurement
- ❖ Certify the National Digital Repositories
- ❖ Financially self-sufficient after a given period

The mechanisms were never published with the policy statement, and yet were an important part of the original policy framework.

These were guidelines and recommendations on HOW the policy should be enacted.

The first mechanism concerns the creation of an Institute for Digital Heritage, and it provided a high-level constitution, business model, and sustainability framework for this institution, and also how this would be created as independent.

To define jobs and associated skill requirements
 For: training, professional development, recruitment

MECHANISM 2 SKILLS FRAMEWORK FOR THE DIGITAL HERITAGE

- Generic skills**
- IT
 - Research
 - Governance,
 - Human Resource management
 - Project management
 - ...

- Digital skills:**
- Digital preservation, metadata/documentation
 - Capture from all media + quality management + packaging
 - Migration of media, formats, metadata
 - Repository management
 - ...

DEFINE A JOB

- Senior ingestion engineer
- Format migration specialist
- Format compliance manager
- Integrity manager
- Digital rights compliance officer
- Redundancy engineer

- Seven levels of authority and responsibility (Ref: SFIA):**
- Level 1: follow
 - Level 2: assist
 - Level 3: apply
 - Level 4: enable
 - Level 5: ensure, advise
 - Level 6: initiative, influence
 - Level 7: set strategy, inspire, mobilise

The second mechanic concerned the Skills Framework which explores the types of jobs which may occur in the future, and the skills requirements for these jobs.

MECHANISM 5 INSTITUTIONAL DIGITISATION CAPACITY SCORECARD

A Capability Maturity Model (CMM) for the digital heritage.

Dimension	Practice Level					Cost	Time
	None	Minimal	Acceptable	Best	Leadership		
Governance		CURRENT		TARGET			
Strategy	CURRENT		TARGET				
Collection Management		CURRENT		TARGET			
Equipment / Facilities							
Skills							
Repository							
Access...							

Mechanism 5 proposed a capability maturity model (CMM) for the digital heritage, which can be used to help assess institutions current capacity and plan customised capacity development for each institution, including whether it will increase its capacity through internal development, buying in resources and capacity, sharing with other institutions, or using outsourcers.

MECHANISM 7 INSTITUTIONAL TRANSFORMATION PROGRAMME

Providing assistance to all institutions for how to transform from physical collections, to digital repositories.

Improving Institutional Readiness.

Deciding – develop, share, or buy capacity

- ❖ What capacity to develop
- ❖ When to develop shared-services
- ❖ When to use centres of excellence / outsourcers

Develop a strategy - from AS-IS to TO-BE

Every institution must transform, otherwise it will become increasingly irrelevant and will eventually disappear. This is a natural law, and it the analogue to the theory of evolution – survival through adaptation to the environment. Our environment is driven by changing needs and technologies, and institutions must continually transform themselves to become better adapted to their environment.

SPECIFIC INSTITUTIONAL CAPACITIES

- ❖ COLLECTION MANAGEMENT: processes for best practice
- ❖ INVENTORYING / CATALOGUING: what is where
- ❖ REPOSITORY MANAGEMENT – DIGITAL PRESERVATION
- ❖ DIGITAL CAPTURE / BORN-DIGITAL
- ❖ MEDIA-SPECIFIC KNOWLEDGE: newspapers, photographs, museum objects, audio-visual, old data formats
- ❖ FORMAT-SPECIFIC KNOWLEDGE: text, sound, still image, moving image...
- ❖ METADATA: specific standards
- ❖ DATABASE / PROGRAMMING / DIGITAL INFRASTRUCTURE

There are a small set of particular areas in which digital institutions should develop capacity, and these can be made available in many ways.

THE FUTURE IMPACT OF AI

Little doubt that AI will continue to expand its sphere of operation.

AI will continue to outpace humans in many areas.

Multiple application areas in digitisation / digital heritage / digital preservation

- auto-ingestors
- auto-documentors
- auto-format migrators
- auto-organisers
- search – already well-developed through AI search engines / semantic searching / bot interfaces
- support for users with disabilities / an agenda of inclusion

We also cannot ignore the role of AI in the future of the digital heritage, and I suggest a number of ways in which AI can promote greater automation, in which the AI can outperform human operators and thus should be preferred. This is not ignoring the needs to create jobs, but that when a machine is better than a human, perhaps the machine is the best approach, since humans can adapt and transform themselves.

A NEW APPROACH TO CAPACITY DEVELOPMENT

- ❖ Distributing capacity : National centres of excellence / major regional institutions / community institutions.
- ❖ Equipment and capacity available as shared resources.
- ❖ Commonly agreed curricula for courses.
- ❖ Future-proofing the jobs in digital heritage.
- ❖ First steps for every institution:
 - apply the institutional capacity scorecard
 - assess the AS-IS and envision the TO-BE positions
 - quantify the GAPS – use these to develop institution-specific strategy
 - implement capacity development programme in each institution based on strategy

I am recommending that capacity should be distributed throughout the sector, rather than being held by single institutions. Whereas all institutions was to survive, and perhaps see that capacity they develop is also their competitive advantage, the larger institutions have a responsibility to the smaller ones, to support them, and to make available their resources to them. This approach to resource sharing was not a part of the original policy, and should be included at the time of policy review.

CALL TO ACTION – NATIONAL PRIORITIES

Institution for Digital Heritage	Revive, formalise, extend, and promote SADI.
Skills Framework for Digital Heritage	Assess current and future needs, clarify jobs and skills standards, develop curriculum frameworks.
Institutional Capacity Scorecard	
Digitisation Capacity Audit	Covering all sectors, institutions, and
Body of Knowledge	Shared knowledge base: standards, experience, case studies, risks, technologies
National Digital Repositories	Set the standards for compliance. Establish one or more. Interlink these for backup.

A number of national priorities should be implemented, arising from the policy, and should be done without delay

HOW WE CAN HELP

CAPACITY: training in many areas of digitisation

PLAN : Strategy development / governance of institutions / collections management / systems

CREATE: capacity development for facilities / equipment / skills, quality anagement / project management

STORE: repository development / trusted digital repositories

USE: online access to collections / exhibition / research / education

ETHER.CO.ZA

We, as the ETHER Initiative, have serviced the heritage sector for almost 15 years, including the development of specialised computer systems for heritage, such as collection management systems, and repositories, and have also provided training in many areas of interest, and have developed curricula which are relevant in the modern world.

Our work in digitisation covers the entire life cycle, and in particular on the governance work concerning strategy development, and shifting the mission and vision of all institutions to accommodate the future digital institution.