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Educational, Scientific and
Cultural Organization

Memory of
the World

CONFERENCE PROCEEDINGS

2nd Inter-regional Conference for the Memory of the World (MoW):
Preserving & Providing Access to Digital Heritage
5-8 November, 2019, Republic of Korea

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Introduction

The 2nd Inter-regional Conference for the Memory of the World (MoW): Preserving & Providing Access to Digital Heritage was held from the 5-8 November, 2019, in Gwangju and Daegu, Republic of Korea. The conference was organised by UNESCO Bangkok with the support of the Asia Culture Center (ACC), the Asia Culture Institute (ACI), the Commemorative Association of the National Debt Redemption Movement, and the Memory of the World Committee for the Asia Pacific (MOWCAP).

The conference brought together over 100 delegates and speakers from 28 countries, including: Australia; Bhutan; Cambodia; Canada; Côte D'ivoire; Chile; China; Egypt; Indonesia; Iran; Jamaica; Japan; Kazakhstan; Kenya; Malaysia; Mexico; Mongolia; Myanmar; Philippines; the Republic of Korea; Samoa; Senegal; Singapore; Switzerland; Vietnam; the United Kingdom; the Unites States of America; and Uzbekistan. A majority of the delegates are members of the MoW Committees from Asia-Pacific, Latin America and the Caribbean and Africa

In total there were 50 speakers at the meeting (including the opening remarks), of whom 23 were female, while 27 were male. 15 of the 24 delegates that UNESCO supported to join the meeting were women.

Background

The UNESCO Recommendation Concerning the Preservation of, and Access to, Documentary Heritage Including in Digital Form (2015) (the Recommendation) is an important standard setting instrument to support the preservation of, and access to, documentary heritage (including in digital form), held in libraries, archives, museums and private collections from across the Asia-Pacific, Africa, and Latin America and the Caribbean.

In order to facilitate the implementation of the Recommendation at the national and institutional levels, from 2017 to 2019 UNESCO has organised a series of regional consultations across the Asia- Pacific, Africa, and Latin America and the Caribbean, involving delegates from over 80 countries[1]. In 2018, the 1st Inter-regional Conference for the Memory of the World was held, bringing together the different regions to discuss the implementation of the Recommendation and exchange experience and ideas.

The results of these meeting has shown that while a number of important initiatives are taking place relating to analogue documentary heritage, preserving digital heritage is a major on going challenge for many countries, with limited knowledge, expertise, and guidelines available on the subject. This also extends to the issue of access, with out-dated copyright laws, a lack of open access policies, and limited use of free and open

[1] https://bangkok.unesco.org/content/unesco-recommendation-concerning-preservation-and-access-documentary-heritage-including

source software being some of the key issues identified.

At the global level, UNESCO and international partners are developing a number of important policy guidelines, tools and strategies relating to the preservation of digital documentary heritage. These include the Digital Strategy for Information Sustainability (PERSIST) initiative; UNESCO/PERSIST Guidelines for the Selection of Digital Heritage for Long-Term Preservation; UNESCO Software Heritage Initiative; Executive Guide on Digital Preservation developed by the Digital Preservation Coalition (DPC) in cooperation with UNESCO/PERSIST.

However, these tools and guidelines are yet to be widely adopted/used in the different regions, and in this regard, the *2nd Inter-regional Conference for the Memory of the World (MoW): Preserving & Providing Access to Digital Heritage* aimed to address this gap.

Aims of the Conference

In this overall context, the conference aimed to bridge the gap between developments at the global, regional, and national and organisation levels for digital heritage preservation, and provide clear information to Memory of the World Committees from Asia/Pacific, Africa, and Latin America and the Caribbean on the strategies and initiatives they can use for their work.

Following the conference, it is expected that this information will be then disseminated at the national level stakeholders in government, archives, libraries, museums, and private sector through the existing national and regional MoW Committee structures. In addition, the conference provided an opportunity for representatives from the UNESCO MoW National Committees to report back on challenges and opportunities for digital heritage preservation, which is expected to informal developments at the global level, as well as to provide input and comments on the various guidelines that have been developed.

In addition, the meeting will build on the outcomes of the 1st Inter-regional Conference for the MoW held in Panama in October 2018, to further enhance cooperation between the established regional MoW Committees: Memory of the World Committee for Asia/Pacific (MOWCAP), the African Regional Committee for Memory of the World (ARCMOW), and UNESCO Memory of the World Committee for Latin America and the Caribbean (MOWLAC).

Conference Topics

The conference was arranged around the five thematic areas of the UNESCO Recommendation concerning the Preservation of, and Access to, Documentary Heritage Including in Digital Form (2015) namely: (1) Identification of digital documentary heritage; (2) Preservation of digital documentary heritage; (3) Access to digital

documentary heritage; (4) Policy measures for digital documentary heritage; and (5) National and International cooperation.

Session 1: Introduction to the Key Issues

Key Issues for the Preservation of Digital Heritage

Dr Lai Tee Phang, Chair of the UNESCO MoW Preservation Sub Committee/ Deputy Director of the National Archives of Singapore

Dr Lai Tee Phang provided an overview of the key issues and initiatives relating to digital heritage preservation. This included an overview of the UNESCO PERSIST: A cooperation platform established between UNESCO, IFLA and the ICA to establish a permanent dialogue between the major stakeholders to boost digital preservation solutions. Dr Phang also shared that PERSIST has now been included in the program of the UNESCO MoW Preservation Sub-Committee, which focuses on technical aspects to ensure the preservation of documentary heritage in its entirety (in accordance with the "Recommendation"), covering analogue and digital heritage.

Session 2: Identification of Digital Documentary Heritage

UNESCO/ PERSIST Guidelines for the Selection of Digital heritage for Long-Term Preservation

Ingrid Parent, Chair, UNESCO-PERSIST Content Task Force

Ingrid posed the question why not collect everything? One challenge is the high volume of data: Data creation increases by 60% a year, while digital storage capacity only increases by 40% a year. Meanwhile library budgets increase by an average of 2% a year. In addition there are technical Issues: Many technical problems can arise, including media obsolescence, software failure, format migration errors, etc. etc. This has resulted in sustainability crisis: *"Unless we do selection to weed out something, we can't preserve anything." (William Kilbride, Digital Preservation Coalition).*

UNESCO/ PERSIST Guidelines for the selection of digital heritage for long-term preservation (2016) aim to address this challenge. The guidelines use the framework of significance to help determine what data should be retained, using the major selection criteria of: Significance; Sustainability; Availability; People and Opportunity. The Guidelines also include a decision tree to assist institutions to make selection decisions, stress the importance of having complete and accurate Metadata, and discuss the impact of the legal environment on selection. The Guidelines are currently being reviewed, moving towards a 2nd edition.

Ingrid invited the participants to support the initiative, especially through further translations in to local languages, volunteering to join the review group for the Guidelines, and promoting the use of the Guidelines in the participants'' institutions and countries.

IFLA Guidelines for Setting Up a Digital Unification Project

Claire McGuire, Policy and Research Officer, International Federation of Library Associations and Institutions (IFLA)

Libraries and archives throughout the world hold collections and individual collection items that are of great cultural importance to people everywhere. They document the inextricable interconnectedness of human history. The full richness of these collections can often only fully be appreciated when they are brought together, yet traditionally, distance and borders have stood in the way of researchers and other users looking to take a comprehensive view.

To address this challenge, IFLA has released its guidelines for setting up a digital unification project. These provide a checklist, and recommendations, for libraries in the planning, delivery, and finalisation of projects to provide digital access to collections across distance and borders. Claire provided an overview of how to use the Guidelines and also shared the case study of the Korean Rare Books Held Abroad initiative (https://www.ifla.org/node/92305). This project involves 100,000 documents and 42 international partners, with the objective of examining, collecting and digitising materials to establish a Korean Studies research information infrastructure.

Claire invited the participants to put the Guidelines to work, especially by translating in to local languages and for use in their projects. A review will also take place in one year's time, and delegates were invited to participate in that process (https://www.ifla.org/publications/node/92435).

The Strategy and Implementation of Archives Digitalization and the Management of Electronic Archives in China

Huang Lihua, Director of the Department of Technology, National Archives Administration of China

This presentation provided an overview of the work the National Archives Administration of China is undertaking relating to the production, identification, management, long-term preservation and access of digital record for the digital continuity including digitized paper record as well as born digital records. In terms of digitization, the First Historical Archives of China has completed the digitization of 8 million pieces and 80 million pages, accounting for 80% of the total collection resources. According to the statistics of *2018 annual report on the basic situation of national archives*, the digitized archives of all kinds of archives at all levels in China are 5.4 billion pages, which amount to 15.564 million GB.

In terms of born digital records, on important development has been the Regulations on Online Government Service of the State Council (April 2019) which stipulates that government service agencies should standardize the management of electronic documents formed in the process of performing their duties, file them in electronic form and transfer them to the archives department in time according to the requirements of archives management. Except as otherwise provided by laws and administrative

regulations, electronic documents are no longer filed and handed over in paper form. Electronic archives that meet the requirements of archives management have the same legal effect as paper archives. The 2017 Provisions of Basic Functions of Electronic Archives Management System puts forward clear requirements for the safety management and long-term preservation of electronic archives.

Session 3: Preservation of Digital Documentary Heritage

Introduction to the Archivematica Open-Source Digital Preservation System

Justin Simpson, Managing Director at Artefactual Systems Inc.

Justin began by introducing Artefactual systems, a company is based in Canada, with 29 employees in 5 countries and 5 time zones (United Kingdom, Spain, Canada, United States, and El Salvador). It is a multi-disciplinary team with Archivists, Librarians, Software Developers, and Systems Administrators. Organisational home to two open source software projects: Archivematica and AtoM (Access to Memory)

Justin then introduced Archivematica, which was first developed by Artefactual in 2007 as a back-end for ICA-AtoM (Access to Memory) and called Qubit-OAIS. Qubit-OAIS was based on standards published by the International Council on Archives, who were key partners in the development of ICA-AtoM. This also tied in to the work of the UNESCO Sub Committee of Technology at the time that recommended that the archival community work together to develop and implement an open source digital archival and preservation system.

Justin then introduced more details of the software. Archivematica is a digital preservation system that automates the process of preparing digital objects for ingest into a repository, ingesting them into archival storage and providing access to the archived material. The process is monitored and controlled through a Web-based dashboard that co-ordinates a suite of micro-services. It primarily relies on normalisation as its preservation technique. Training support is available through Archivematica Camps- a chance for anyone interested in or currently using Archivematica to come together, learn more about the platform, and share their experiences.

The UNESCO Open Software Heritage Initiative

Dr Fackson Banda, Secretariat Memory of the World (MoW) programme, UNESCO Headquarters

Dr Banda provided an overview of the Open Software Heritage Initiative, which aims to preserve and share the source codes of all software programmes that have been giving life to computers since the middle of last century. Over 4 billion unique source code files, including their successive iterations and more than 83 million software projects in all fields are already available from the online archive.

In this context the UNESCO is supporting Software Heritage, the first and largest archive of software source code. The mission is to collect, preserve and share the source code of all available software, creating The Great Library of Source code. The initiative was launched in June 2018 at UNESCO and currently there are 90+ million software projects archived and 6+ billion source files.

In November 2018, a group of experts, from research, industry and memory institutions gathered in UNESCO and issued the Paris Call on Software Source Code as Heritage for Sustainable Development: "[We call to] support efforts to gather and preserve the artifacts and narratives of the history of computing, while the earlier creators are still alive". In October 2019, UNESCO, the University of Pisa and Inria responded to the Call by issuing SWHAP, the first detailed guidelines to curate and properly archive landmark legacy source code on Software Heritage.

The International Internet Preservation Consortium (IIPC) and Preserving Online Digital Heritage on the Web

Youssef Eldakar, Head of Department for the International School of Information Science at the Bibliotheca Alexandrina (BA)

Libraries, archives, and other memory institutions have for long taken on the responsibility towards humanity to preserve documentary heritage. It, therefore, follows that memory institutions have an obligation to archive content on the web just like they have for long been archiving content in the traditional formats. If they did not, and with much about today's human society continually being written about on the web, we risk failing to preserve a significant portion of our collective memory for the generations to come.

Mr Eldakar shared that the practice of archiving webpages and making them publicly accessible goes back at least to the founding of the Internet Archive in 1996 by Brewster Kahle. Working towards the goal of preserving the web for humanity, Brewster Kahle in 2002 worked with the Bibliotheca Alexandrina to get the revived library started with web archiving and set up a mirror of the Internet Archive's web archive collection in a geographic location far away from the Internet Archive's home in San Francisco.

To take the effort to archive the web to a truly international scale, the International Internet Preservation Consortium (IIPC) was officially charted in 2003 with 12 initial members. The IIPC has since been working to "collect, preserve, and make accessible knowledge from the global web," and has been growing in scale and diversity, being comprised today of over 50 institutions of various types. Information about the IIPC's web archiving activities can be found on their website: www.netpreserve.org.

Session 4: Policies and Strategies for Digital Heritage Preservation and Access

Introduction to the Executive Guide on Digital Preservation

Lai Tee Phang, Chair of the UNESCO MoW Preservation Sub-Committee/ Deputy Director of the National Archives of Singapore, and Robert Buckley, Chair PERSIST Programme Policy Workgroup/ Technical Adviser, The National Archives of UAE (in-absenti)

Dr Phang shared that an Executive Guide on Digital Preservation has been developed between the Digital Preservation Coalition (DPC) and UNESCO. Executive Guide on Digital Preservation provides practitioners with a combination of generic and specific messages and motivators designed to communicate with senior executives, legislators and budget holders, as well as decision and policy makers with a view to embedding the value of digital preservation at the core of every organisation. It is designed for use by those who plan, implement and manage digital preservation in Memory and heritage institutions, government bodies and not-for-profits, commercial and financial organisations, and can be applied in all organisations.

The executive guide aims to inform senior executives, legislators, policy makers, and anyone with the capability to unlock the support and resources needed for digital preservation. The Guide recognises that every organisation is different, with different priorities, risk factors and motivators. So a user can select statements from the Guide and tailor them to their particular need.

Dr Phang invited all participants in the conference to participate, generate, use/re-use the Guide. An update on the Guide and its progress at International Council on Archives Abu Dhabi 2020 Congress, 16 -20 Nov 2020. National Committees and memory organisations are invited to consider funding awareness and training sessions relating to digital preservation and to also generate and contribute their own scenarios. Users are welcome to submit the customised messages they create using the Guide for inclusion in future iterations and to translate the Guide in to local languages.

Digital Preservation Policies and Strategies: Perspectives from Latin America

Gabriela Andaur, Digital Archivist, National Archives of Chile/ Lecturer and researcher, Alberto Hurtado University

Ms Andaur focused on the case study of the modernization project of the National Archives of Chile within her presentation. The aim of this project was to ”To provide the National Archives with a system to receive electronic records, implementing an OAIS-compliant technological platform and following archival best practices to ensure the long-term preservation of records.”

The project will include the development of supporting procedures, including guidelines for records classification, appraisal, retention schedules and technical requirements for digital transfer (second version released in October 2019). Support will also be given to five (5) public institutions, which will be the first ones transferring their records to the National Digital Archives at the National Archives of Chile. Beta release of electronic platform for transfer and preservation of records in December 2019 with a fully operational version expected by the end of 2020.

In her presentation, she also touched on some of the challenges from a regional perspective. This include the need to address the following questions: (1) How can we move from a short to a long-term view?: (2) How can we move from good will to policy?; (3) How can we demonstrate the need for a permanent investment?; (4) How will we build capacities to face digital preservation? (dependency v. collaboration).

Documentary Heritage Access Guidelines for Persons with Disabilities

Prof. Alireza Darvishy, Zurich University of Applied Sciences

Prof Alireza Darvishy has been working with UNESCO to develop the Documentary Heritage Access Guidelines for Persons with Disabilities. These guidelines aim to provide persons with disabilities with access to the digital documentary heritage on an equal basis with other users, and contributing to the implementation of the relevant international normative instruments such as the UN Convention on the Rights of Persons with Disabilities (2006- including the articles linked to the accessibility, access to cultural and political life, education, international cooperation and others).

The guidelines for accessible digital documentary cultural heritage are targeted towards librarians, archivists, museum workers, curators, conservators, IT specialists, and other stakeholders interested in disability and accessibility. The guidelines outline the need to: Plan to allocate sufficient resources for accessibility; Consider accessibility at every step of document digitization, rather than fixing accessibility issues post hoc; Involve persons with disabilities and/or accessibility experts in the process; Work with experts in the subject material and the physical materials of the documents; Content should be described using simple, understandable language; Digital platforms must be designed with accessibility in mind; Digital images should be accompanied by a text description of their subject's key features (content and form) and should be captured with the highest resolution possible; PDF documents should be screen-reader accessible; Videos should be accompanied by captions, sign language interpretation, and audio description; Audio should be accompanied by a text transcript.

In conclusion Prof. Darvishy invited all of the conference participants to review the draft guidelines and to provide feedback.

Session 5: Interregional Cooperation for the Preservation and Safeguarding of Digital Documentary Heritage

Interregional Cooperation for the Preservation and Safeguarding of Documentary Heritage

Fackson Banda, Secretariat Memory of the World (MoW) programme, UNESCO Headquarters

Dr Fackson Banda provided an overview of current initiatives of the UNESCO MoW Secretariat for the preservation of documentary heritage, including in digital from, with particular reference to opportunities for cooperation between the different regionals.

The Secretariat will organise the 2nd Global Policy Forum on Disaster Risk Reduction and Management for Sustainable Preservation of Documentary Heritage scheduled for March 2020. Participants were invited to join this meeting.

African Regional Committee for Memory of the World (ARCMOW): An Update

Dr Papa Momar Diop. Vice-President of ARCMOW Executive Board

A survey was undertaken in October 2019 to ascertain current progress and challenges facing African countries/organisations relating to digital heritage preservation. The target group for the survey were ARCMoW members who attended the Abuja African Consultation for the implementation of the 2015 Recommendation in Abuja, Nigeria, in 2018. One challenge was that the survey was conducted over a short period, leading to limited responses (6 responses were received from Nigeria, Mauritius, Seychelles, Eritrea, Gabon, and Benin respectively).

There are two countries which have a national strategy for the long term preservation of digital heritage: Nigeria and Mauritius. The others do not have. None of these countries has a school or tools to training people for the preservation of digital heritage. However, Gabon has a project to establishing an Electronic Document Management (EDM) system entitled "Gabon Digital 2025".

The following key challenges were evident from the survey:

- Does not know where to start;
- Need of funding;
- Need of training;
- Need of administrative support;
- Lack of support and guidance;
- Lack of best practices/models;
- Strategic partnerships at (inter)national level;
- Sharing of information and solutions;
- Information on efficacy and costs of long term preservation;
- Definition of standards for content and metadata;
- Regional cooperation regarding digital sustainability;
- Information on efficacy and costs of long term preservation;
- Regional cooperation regarding digital sustainability;
- Lack of technical expertise.

Memory of the World Committee for Latin American and the Caribbean (MOWLAC): An Update

Claudette Thomas, Chair of the Jamaican Memory of the World Committee, and Fernando Osorio-Alarcon, Member Subcommittee of Technology Memory of the World Program

Ms. Thomas provided an update on the work of the MOWLAC, with a particular focus on the on the Caribbean sub-region. In October 2018 and September 2019, delegates from

the Caribbean MoW committees have met and discussed challenges and opportunities for documentary heritage in the region.

Some of the challenges identified included:

- Lack of business continuity and disaster recovery planning;
- Absence of ICT policies and standards;
- Loss of collection, infrastructure and other resources, base the severity of hurricanes in recent years in light of due to Climate Change e.g. In one single year 2017; September 6 – Irma, September 9 – José and in September 19 – Maria due to documentary heritage in our SIDS;
- Deficit of RIM ICT skills & systems;
- Lack of Funding and limited collaboration militating against realising economies of scale of government, regional and international organisations.

While the opportunities included:

- The MIGAN (Memory of the Island Gateway for Archives) Project which provides access to low cost database system (ICA AtoM), across countries of the region;
- St. Kitts and Indian governments' strategic alliance – between Indian descendants whose fore-parents emigrated as Indenture servants to St. Kitts – through the digitization of these records citizenship and identification cards were awarded by India based on to immigrant records which were found in their Archives in 2016;
- Opportunity - Enhancing regional approaches to disaster recovery and heritage preservation by the Caribbean Archives Association;
- A project by the Coordinating Council of Audiovisual Archives Associations (CCAAA) on Archives at Risk: Endangered Audiovisual Archives and Global Preservation Efforts;
- Using the UNESCO SIDS Action Plan as a framework for preserving documentary heritage in the Small Island Developing States (SIDS), including through the MoW Programme.

UNESCO Memory of the World Committee for the Asia-Pacific (MOWCAP): An Update

Kwibae Kim, Chair of the MOWCAP

A preliminary survey was conducted to identify what policies archives, museums and libraries are implementing in the Asia-Pacific to address these challenges, and what are their challenges/needs for capacity building support. The survey was held from 9-25 November 2019. 29 responses were received from 17 countries in the Asia-Pacific. Dr Robert Buckley from the UNESCO-PERSIST's Policy Working Group helped guide and provided support in the design of this survey.

Many organisations/ countries in the Asia-Pacific do not have digital heritage preservation policies. Lack of best practices/ models and Lack of technical expertise are key barriers for the preservation of digital heritage at the national and organisational level. More training support in this area is needed from UNESCO (PERSIST), MOWCAP and other partners. This can be in the form of training in digital heritage reservation

systems (such as Archivematica), the UNESCO/ PERSIST Digital Heritage Selection Guidelines, UNESCO/DPC Executive Guide on Digital Preservation and other tools. There appears to be a gap between developed and developing countries in terms of theorizing, developing policies, and implementing projects relating to digital heritage preservation/ access. Care is needed to ensure that support is given to developing countries in the Asia-Pacific to ensure that digital heritage can be preserved as a central part of their national histories.

Session 6: Case Studies of National, Regional and International Cooperation

Return to Baguia: International Cooperation Project to Provide Digital Access to Baguia Collection using the Online Cultural Collections Analysis and Management System (OCCAMS)

Junran Lei, Centre for Digital Humanities Research, Australia National University (ANU), and Dr Joanna Barrkman, Senior Curator of Southeast Asian & Pacific Arts Department, Fowler Museum at UCLA (in-absenti)

The Baguia database contains records for the Baguia Collection objects acquired and photographs taken by Swiss ethnographer, Dr Alfred Bühler in 1935, from Baguia, Portuguese Timor (now Timor-Leste). It also includes film footage taken by his expedition companion, Dr Wilhelm L. Meyer. The Baguia Collection is part of the permanent collection of the Museum der Kulturen Basel, Switzerland. Using the Online Cultural Collections Analysis and Management System (OCCAMS) platform, this important collection has been shared with new audiences in Timor-Leste and across the world. This project was supported by the ACC and MOWCAP through the 2018 small grants program.

OCCAMS – Online Cultural Collections Analysis and Management System- is a collaborative research tool for people working with and creating cultural collections. It is an online database that allows people to organise, annotate and link data in standard formats and has a digital asset management system for managing digital files such as images, video, audio and documents It is also a research tool with restricted access levels, flexible views and the ability to link and annotate data. The two components of OCCAMS are the Digital File Library for data upload, storage and access and the Project Workspace for creating records and collections, for annotation, analysis and discovery.

Digital Preservation and Access to Memory of the World Collections: Challenges and Opportunities in Samoa

Vaveao Toa, Principal Recordkeeping Officer, Ministry of Education, Sports and Culture, Samoa

This presentation focused on Samoa's first experience on Digital archives: Preserving and providing access to a Memory of the World Regional collection. During the German colonization in Samoa from 1900-1914 the German Administration created and kept records of their administration activities of this period. This collection is under the

custodian of the National Archives and Records Authority of Samoa. This collection has been digitised through a project funded by the German Bunchive through a partnership with Archives New Zealand and Samoa. The Online Digital access of the collection is available through Archives New Zealand.

A number of challenges and opportunities have been identified during the project implementation. The challenges included: Limited timeframe for the work; Limited digital storage for the digitised material; insufficient staff; Language difficulties (the records are in old German); Limited local budget Facility challenges and poor power supply. The opportunities include: Identification of the need for a server; Easier for locals and visitors to access information; Created more opportunities for people all over the world to access information online.

Providing Digital Access to joint inscriptions on the Memory of the World Register: case study of the National Archives of Indonesia

Adhie Gesit Pambudi, Head of Domestic and International Cooperation, National Archives of Indonesia

The presentation focused on digital access to documentary heritage that has been inscribed by joint nomination on the international register, including the (2003), Asian-African Conference archives (2015), Indian Ocean Tsunami Archives (2017). The digital preservation of VOC Archives in ANRI is conducted by a project so called DASA: Digital Archives System at ANRI in collaboration with a NGO from the Netherlands, The CORTS Foundation. In 2017, ANRI develop a Digital Repository (E-Depot) that uses OAIS Preference Model as the basis of digital preservation in the institution. This digital repository is projected to preserve the archives with world significance such as Asian-African Conference archives and Indian Ocean Tsunami Archives.

Developing Semantic Digital Archives for Increasing Access to Memory of the World Collections

Myung Dae Cho, Professor, Seoul National University

Prof. Cho introduced a new structural theory based on semantic technology that can link MoW collections across national, regional and international borders, thereby enhancing access and international cooperation. This technology can accurately identify a word and arrange it in a variety of relationships to provide abundant affordances for users. This means that it is possible to do so-called "Thing" searches in graph structures, not just "Strings". Prof. Cho used example of the online international ICH intangible cultural heritage) and MoW website to demonstrate the potential of semantic archives.

The Preservation of Digital Heritage at the Central Library and Documentation Center of University of Tehran

Dr Susan Asili, Deputy of the Central Library and Documentation Center, University of Tehran

Dr Susan Asili provided an overview of the digital heritage preservation strategies and software systems at the Central Library and Documentation Center (CLDC) of University of Tehran. The CLDC currently has about 20 million digital files from its sources, with the number increasing every day. The digital documents of the CLDC are loaded into the library software that started with the priority of manuscripts. Currently, the digitized images of more than 10,000 manuscripts (3000000 leaves) are available to researchers and the public through an online databases.

An Overview of the Asia Culture Center (ACC) and ACC Archives

EunJung Kim, Assistant Director, Research and International Relations Division, Asia Culture Center

Featuring a variety of materials including photos, images, videos, sound files, and documents, the ACC Asia Culture Archives consist of various collections, including the Special Collection. The collection is one of the largest archives relating to culture, and covers performances, art events, cultural festivals and more from across Asia. The ACC maintains an extensive digital archive and portal to provide access to this important collection. The ACC has also been supporting the preservation and access to documentary heritage across the Asia-Pacific through the ACC-MOWCAP Grants Program.

Session 7: Creating Access to Documentary Heritage Collections through Digitisation

Digital transformation at Wellcome Collection

Tom Scott, Head of Digital Engagement, Wellcome Foundation

The Wellcome Library is founded on the collection formed by Sir Henry Wellcome (1853–1936), whose personal wealth allowed him to create one of the most ambitious collections of the 20th century. The Library is developing a world-class online resource for the history of medicine by digitising a substantial proportion of its holdings and making the content freely available on the web. The Library's digital collections are growing to include: cover-to-cover books; video and audio; entire archive collections and manuscripts; paintings, prints, drawings, photographs, ephemera and more.

Wellcome have identified a number of problems to be solved to enable the public to access their digital collections. Some of the key challenges are: People don't know what's in the collection; People don't know what they are searching; Lack of context: We have atomised collections to the point where you can (in theory) find everything but you have no idea what you're looking at; How to provide access for all.

To address these challenges Wellcome focus on digital transformation: "The transformation underpinning our aspirations is fundamentally about: people, culture, processes and how we can use technology to place our users first in delivering services that meet or exceed their expectations."

Introducing the National Debt Redemption Movement Digital Archives project

Prof. Kim Young-Chul, Co-representative, The Commemorative Association of the National Debt; Dean of the Department of Economics and Finance, Keimyung University

The Archives of the National Debt Redemption Movement were inscribed on the International Memory of the World Register in 2017. The collection is now the focus of a large digital archive project and is an example of how a MoW inscription can be made accessible. The initiative has an emphasis on making the collection to audiences globally, through a program of workshops, seminars, translation of material, digital archives, and cooperation with international institutions. A larger project is also beginning to create a The National Debt Redemption Movement Memorial Larchiveum. The concept is to combine the features of a Library + Archive + Museum, to create a 'Larchiveum'.

Artificial Intelligence Based Learning for Digital Heritage Archives

Minho Lee, Artificial Brain Research Lab., AI Institute of Technology, Dept. of AI, School of Electronics Engineering, Kyungpook National University, South Korea

The conventional research activities on traditional archives have been dependent on the efforts of the limited number of experts in the various fields. On the other hand, deep learning has been on the rise not only in many professional academic fields but also in industrial areas. Recent breakthroughs have adopted deep learning methods, eventually outperforming the state-of-art algorithms in many engineering applications. Due the advancement of the deep learning technologies and computational capabilities the proposed methods utilize these recent technologies for high-precision data analysis and aims at developing novel engineering solutions to the problem of understanding the traditional archives automatically with minimal intervention of the experts.

Session 8: Providing Access to MoW Collections through Digital Platforms

Developing Classification for Digitalisation of NDRM Documents

Kyung-Nam Kim, Professor, Department of History, Kyungpook National University

Prof Kim's presentation will identified present condition of the digitalization of UNESCO's Memory of the World by focusing on the Archives of the National Debt Redemption Movement. In doing so, it explained the source of the Archives of NDRM and the distinctiveness of its classification system, and suggests the reasons why the archival approach according to the International Standard ISAD(G) 2nd EDITION is required to deal with digitalization of the Memory of the World.

Tuol Sleng Genocide Museum Archives Preservation and Digitization project (TSGMAPDP)

Hang Nisay, Project and Planning Section Chief & Exhibition and Education Program Coordinator, Tuol Sleng Genocide Museum, Cambodia

Tuol Sleng Genocide Museum Archives Preservation and Digitization project (TSGMAPDP) aims to digitize over 400,000 pages of documents of the Toul Sleng Genocide Museum which were listed on the UNESCO World Documentary Heritage List in 2009 (http://www.unesco.org/new/en/tuol-sleng-genocide-museum-archives). The project is funded by Korea International Cooperation Agency (KOICA).

The project work began in 2018 and aims to digitize the collection, while also assessing and improving conditions for optimal preservation. Approximately 400,000 documents have been indexed and descriptive metadata was added. The digital files have also be complied into a database in English and Khmer. Additionally, the Tuol Sleng museum staff have undertaken training in preservation, digitization, and indexing techniques to continue preserving the collection as needed. Currently, a website is being hosted to disseminate the educational resources to thousands of online visitors. One current challenge is deciding on who can access the collection and under what conditions. The Tuol Sleng museum are undertaking dialogue with key partners to determine.

Digitisation of the Amadou Hampate Ba Foundation

Roukiatou Ba, Director, Amadou Hampate Ba Foundation

Amadou Hampâte Bâ's scholarly contribution towards elaborating a unified system for the transcription of African languages. This presentation will focus on current project supported by UNESCO to digitize and make accessible a collection of manuscripts for the public.

Preserving and Providing Access to the Imperial Archives of Nguyen Dynasty - Challenges and Opportunities in the Digital Age

Nguyen Thu Hoai, Deputy Director of The National Archives Center, Vietnam

The Imperial Archives of Nguyen dynasty are the administrative records of the Nguyen dynasty, the last feudal dynasty in Vietnam (1802-1945). The collection was inscribed on the Asia Pacific Memory of the World Register in 2014 and on the International Memory of the World Register in 2017. The documents have been scientifically arranged for convenient searching. All original documents have been digitized, created database and provided access on the intranet; these documents are written in ancient languages, so the access is limited. Experts on ancient languages are currently making efforts to translate into Vietnamese and English. It is expected in 2020 to provide access to the internet to serve the public.

Free and Open Access to Abai's Digital Documentary Heritage

Elmira Salykova, Head of the Management and Marketing Service, National Academic Library of the Republic of Kazakhstan

Many years have passed since the time of Abay, several generations have changed, but his works do not lose their relevance in the present time. Today, the funds of the Kazakhstan national electronic library are intensively replenished with Abay's works,

books devoted to the work of the Great educator. All these books are presented in full-text version. The national Committee "Memory of the world "of the Republic of Kazakhstan plans to put forward an application for inclusion in the world register of" Memory of the world" of Abay's digital heritage.

Digitisation of the Department of Archaeology Yangon Photo Archive Project

Aye Mi Sein, Deputy director, Department of Archaeology and National Museum, Myanmar, and Wai Phyar Soe, Department of Archeology, Yangon, and Misako Ito, UNESCO Bangkok

This project will involve the digitisation of more than 5,000 glass plate negatives taken from 1903 to 1941, depicting monuments, reliefs, paintings and statues associated with the Bagan Archaeological Area and Monuments and other sites across Myanmar. The digitised images will be made available to researchers and the public through an online database. The project has been made possible through generous funding provided by the National Archives of Korea.

Session 9: Open Access Software for Documentary Heritage

Introduction to the Atom Open Source Software Application

Justin Simpson, Managing Director at Artefactual Systems Inc.

AtoM stands for Access to Memory is a web-based, open source application for standards-based archival description and access. The application is multilingual and multi-repository. It was first commissioned by the International Council on Archives (ICA), with support from UNESCO, to make it easier for archival institutions worldwide to put their holdings online using the ICA's descriptive standards, the project has since grown into an internationally used community-driven project. Artefactual is the lead developer of AtoM.

One recent development has been the creation of The Access to Memory Foundation. The foundation is a federally incorporated, community-driven, soliciting non-profit body. The Foundation was established in 2018 to oversee and support the development, sustainability and adoption of Access to Memory (AtoM) as a multilingual, multi-repository open source application for standards-based archival description and access.

Artefactual systems, in consultations with stakeholders, decided that a non-profit foundation is the best way to provide governance and promote community involvement in the development and maintenance of AtoM 3. AtoM is not just a software tool, it is an open-source project. Being open-source has profound implications for how software is developed, released, documented and made available to communities of users around the world. The Foundation wants to give organizations that use AtoM, or who are considering using AtoM, a stake in how the software evolves. Further information can be found online: https://accesstomemoryfoundation.org

Providing Access to Documentary heritage using Open Source Software

Daejin Ahn, CEO, ArchiveLab Inc.

ArchiveLab Inc has been undertaking a number of projects using open sources software (Omeka and Atom). This presentation will look at the use of open source software such as the Atom, Archivematica, Omeka in Korea as a means to providing access to digital collection, especially in the private sector. This presentation will provide MoW stakeholders with an overview of the different open source collection management systems, and how they have been applied by memory organisations in the Korean context. In 2017, the ACC supported MOWCAP to create a database of inscriptions from the Asia-Pacific (MOWCAP Archive). This work was undertaken by the Archives Lab team using Omeka open source software. The Archives Lab is using open source software (Omeka and Atom) to provide access to digital collections.

Cataloguing, Indexing and digitization of Archaeological Documents and Reports of Iran (from 1908 to 1941)

Fariba Farzam, Director, Documentation Center and Library of Research Institute of Cultural Heritage and Tourism (RICHT), Member of Iran MoW National Committee, and Babak Mashhadi, Chairman, Telia Information Technology Company

The Documentation Centre of Research Institute of Cultural Heritage and Tourism in Iran has digitized more than 2,000 pages and made accessible on a web-based platform. The platform is designed based on standards such as ISAD (G), ISAAR and etc. for exchange of data of Iran archaeology activities with other countries engaging to the matter and making possible in the future a joint nomination of documentary heritage through international digital platforms. The MOWCAP-Asia Culture Center grant has supported part of this project.

Discussion Summary

Guidelines and Tools

A number of guidelines were discussed in the meeting, including:

- UNESCO/PERSIST guidelines for the selection of digital heritage for long term preservation -> Used by memory institutions to develop their own policies;
- IFLA guidelines for setting up a digital unification project -> libraries to plan and implement projects to provide digital access to collections across borders;
- Digital Preservation Coalition (DPC)/UNESCO Executive Guide on Digital Preservation -> used by practitioners to advocate for digital preservation at the core of every organization;
- UNESCO Guidelines for accessible digital documentary heritage for persons with disabilities (first draft in progress).

Participants in the conference were encouraged to the contact the focal points for each of these initiatives to provide inputs on the tools, and share how they are using them in their own countries/organisations. In addition, delegates were encouraged to help support with the translation of the material in to local languages.

A number of tools and initiatives were also shared the conference:

- Archivematica -> FOSS for digital preservation;
- Access to Memory (AtoM) -> web based open source app for standards-based archival description and access;
- Omeka -> open source web publishing platform for sharing digital collections;
- Software heritage -> digital library to store software source codes;
- International Internet Preservation Consortium -> solutions for web archiving.

Case Studies

Case studies were presented from 13 different countries during the conference, highlighting current projects as well as institutional structures and programs, including:

- National digital heritage strategies from the National Archives Administration of China and the National Archives of Chile;
- Digital Access to the Baguia Collection from Timor-Leste;
- Digital archives of German administration records in Samoa;
- Digital archives of Asian-African Conference archives and Indian Ocean Tsunami Archives;
- Central Library and Documentation Center of University of Tehran;
- Asia Culture Center Archives, ROK;
- Digital collections at Wellcome Collection, UK;
- Digitization of the archives of the National Debt Redemption Movement, ROK;
- Tuol Sleng Genocide Museum Archives preservation and digitization project, Cambodia;
- Digitization project of the Amadou Hampate Ba Foundation, Ivory Coast;
- Digitization of Imperial Archives of Nguyen Dynasty, Vietnam;
- Abay's digital documentary heritage, Kazakhstan;
- Bagan Photographic Archive project, Myanmar;
- Archeological Documents and Reports of Iran.

Challenges/ Opportunities Identified

Challenges

- Many digitization projects and initiatives worldwide but most organisations/ countries in the regions do not have long term preservation policies for digital heritage;
- Lack of resources and technical expertise are key barriers for the preservation of digital heritage at the national/organisational level;
- More support and trainings in this area are needed;

- Need to improve users' accessibility (people with disabilities, old scripts, etc.) and experiences in navigating digital collections.

Opportunities

- Member States' obligation to report on the implementation of the UNESCO Recommendation on Documentary Heritage (including digital heritage);
- International, regional, national cooperation platforms (e.g. digital unification projects, MoW regional committees, interregional conferences);
- There are many good practice examples that can be followed (e.g. Wellcome collection);
- Access to information law and SDG 16.10 as well the as the UNESCO Recommendation on documentary heritage;
- AI applications to access to old scripts/manuscripts;
- Availability of FOSS.

Recommendations/ Next Steps

- The translation of documents and guidelines should be included in the work plans of UNESCO CI for 2020-2021 in the region: UNESCO/PERSIST guidelines for the selection of digital heritage for long term preservation; Digital Preservation Coalition; (DPC)/UNESCO Executive Guide on Digital Preservation; UNESCO Guidelines for accessible digital documentary heritage for persons with disabilities. National and regional MoW Committees can play a key roles in this translation work. This work could be centralised using platforms such as https://www.transifex.com (Artefactual use this for the translation of Atom).
- Contributions to existing guidelines and tools: A number of the tools and guidelines created for digital heritage preservation/access are under review or are being created. In this regard, there is an opportunity for MoW Committees from Africa, Asia-Pacific and Latin American and the Caribbean to provide input as well as share experiences from different regions. This will also help to ensure that there is increased diversity and different perspectives especially from developing country contexts and small island developing states.
- Localizing software and tools: This can be done through translation/adaption to local contexts. As one example, the Atom can be translated in to local languages using the https://www.transifex.com tool.
- Promoting the use of guidelines in institutions and countries: There is a need to apply the existing guidelines and tools in memory institutions from across the different regions. It is hoped that the information provided during the conference will enable the conference participants, and their respective networks, to being to use the tools and report back results/feedback to the focal points from UNESCO/IFLA/ICA/DPC, etc.
- Supporting trainings: A common theme through the conference was the call for specialised training for digital heritage preservation/access. More training support in this area is needed from UNESCO (PERSIST), UNESCO field offices, MOWCAP/MOWLAC/ARCMOW and other partners. This can be in the form of

training/camps on Archivematica/Atom, the UNESCO/PERSIST Digital Heritage Selection Guidelines, UNESCO/DPC Executive Guide on Digital Preservation and other tools.

- Strategic partnerships at (inter)national level – developing link between industry, government and memory institutions, and other community archive models. The national MoW Committees and regional committees are 'umbrella' or convening forums that can bring all of these stakeholders together at the national and regional levels. This convening power should be leveraged.
- Sharing of information and solutions (inter-regional conferences): A further regional conference should be held in 2020 with the support of UNESCO and other partners. These forums provide an ideal platform to share information and address cross cutting issues.
- Moving from project based digitization/preservation initiatives to long term preservation policies (e.g. taking advantages of digitization projects for specific collections to develop and integrate an archival policies for digital heritage).
- Addressing gender bias in AI and documentary heritage: Gender bias is evident in the MoW register, with few inscriptions relating to women. This is also a need to combat gender bias in applications using artificial intelligence.

List of Participants and Speakers

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