

Digital Preservation of Records in Archaeological Survey of India: Problems and Challenges

S.B.OTA

**National Mission on Monuments and Antiquities
Archaeological Survey of India**

Email: nationalmission@gmail.com

Workshop on Digital Preservation in India

7th November 2008

Archaeological Survey of India

Archaeological Survey of India is one of the oldest organizations in the Government of India created in 1861

- Carries out archaeological investigations through explorations and excavations for proper understanding of the past.
- Documentation of archaeological resources
- Protects and preserves national archaeological heritage

Need for Creation of Records

- The archaeological heritage resource is finite and non-renewable that are fast disappearing.
- Create authentic records of these resources that can be preserved for the posterity ensuring that the people can discover, use and learn about these archaeological resources from these records.
- Need to be documented through various means such as visual records (photography, drawings, estampages etc.) and text records for the posterity facilitating historical understanding of the past.

Use of Archaeological Records

- Facilitate historical understanding from the records.
- Recreation of archaeological evidence through authentic records.
- Easy dissemination of archaeological information.
- Planning and management of archaeological resources.
- Helps in tracking stolen antiquities.
- Used in various scientific investigations.

Types of Archaeological Records

- Photo Negatives
- Photographs
- Maps and Drawings
- Printed text records
- Handwritten text records
- Paintings
- Manuscripts
- Estampages
- Video
- 3-D Scanning data

Types of Photo Negatives and Photographs

- Negatives (Glass negatives and Celluloid negatives)
- Slides
- Photographs
- Digital Photographs
- Video films
- Video tapes
- Digital videos

Types of Maps, Drawings, Text Records

- Maps and drawings in pencil
- Maps and drawings in ink
- Printed maps and drawings
- Digital drawings
- Hand written texts
- Printed texts
- 3-D Scanning data

Scanning of Film Negatives

Work carried out by American Institute of Indian Studies

३. Nearly 10,000 film negatives of varied sizes (3" x 4", 4" x 5" and 2.25" x 2.25")
- ॣ. Scanned in 1000 dpi with 2x Optical density
- ॡ. Editing done wherever required
- ।. Stored in TIFF (uncompressed) format
- ॥. Created a database in Excel

Digitization of Archival Books

Work carried out by Indira Gandhi National Centre for Arts

- Nearly 5,000 books with more than 20 lakh pages
- Scanned in 300 dpi
- Scanned in colour mode
- Stored in TIFF format
- For easy access it is converted to JPEG
- Back up on online server

Digitization of Glass Negatives

Work carried out by Kinsey Bros., New Delhi

- Glass negatives of more than 100 years old.
- Varied Sizes (6" x 8", 10" x 12" and 12" x 15")
- Nearly 10,000 negatives
- Smaller size negatives were scanned whereas bigger size negatives were digitally photographed through high end digital camera.
- Scanned in 300 dpi (followed Manuscript Mission Handbook)
- Stored in TIFF format
- A customized software 'IMAGE PHOTO SEARCH' was developed for retrieval purposes.

Problems in Digital Preservation of Negatives

- Negatives and Slides
- Negatives of different material (glass / celluloid)
- Different age
- Different sizes
- Variations in intensity and type of damages
- Varied resolution
- Exposed in different cameras
- Black & White and Colour negatives / slides

Problems in Digital Preservation of Photographs, Maps, Drawings and Paintings

- Different medium (types of photo papers, tracing paper/cloth, leather, drawing sheets, different painting medium like handmade paper, cloth, canvas, wood metal etc.)
- Different age
- Different sizes
- Records of unspecified sizes
- Variations in intensity and type of damages
- Variation in colours and nature of colours (pencil / ink / water colour / oil paint etc)
- Digital drawings (Auto CAD drawings)

Problems in Digital Preservation of Text records and Estampages

- Different age
- Different sizes
- Variations in intensity of damages
- Variation in colours
- Handwritten / typed / printed
- Problem in estampages

Requirements

- Provision for appropriate output retaining the original features of the archival records.
- Provision for well defined scale for blow ups in case of photographs, drawings, maps etc.
- Provision for micro features of the records beyond life size for specific research purposes.
- Provision for easy access when the archival records are shared with public domain.
- Noise reduction in digitization.

Expectations from Professionals on Digital Preservation

- Defining prescribed resolution
- Defining formats for storage of varieties of records
- Mode of preservation of records
- Develop strategy / policy guideline for digital preservation
- Identification of risk factors
- Derive successive models for the maintenance and recovery factors for the digital archival records
- Provision of appropriate safety measures to prevent hacking of the archival records
- Compatibility with state of art and future advance in digital technology
- Integrity of document structure and navigation
- Authenticity in colour

Suggestions . . .