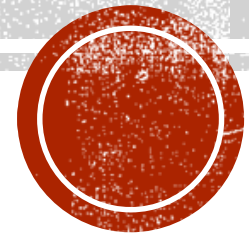


# DIGITAL PRESERVATION

BY-DIVYANSI SAXENA

LIBRARY INTERN



# AGENDA

- Introduction
- Needs of Digital Preservation
- Principles of Preservation as applied to Digital Preservation
- Factors of Digital Preservation
- Digital Preservation strategies
- Problems and challenges of Digital Preservation
- Key Takeaways

# INTRODUCTION

- **Digital Document Preservation** maintains digital data in its original form to ensure its long-term **usability**, **durability**, and **integrity** for future access and use.

# DEFINITION

“Digital preservation consists of the processes aimed at ensuring the continued accessibility of digital materials. To do this involves finding ways to re-present what was originally presented to users by a combination of software and hardware tools acting on data.”

*-UNESCO*

“Digital Preservation refers to the series of managed activities necessary to ensure continued access to digital materials for as long as necessary...(digital preservation)refers to all of the actions required to maintain access to digital materials beyond the limits of media failure or technological and organizational change.”

*- Digital Preservation Coalition*

# NEEDS OF DIGITAL PRESERVATION

- Ensures Long-term Access
- Prevents Data Loss
- Preserves Cultural and Historical Records
- Supports Compliance and Legal Requirements
- Facilitates Research and Education
- Maintains Intellectual Property
- Economic and Operational Value

# **DIGITIZATION**

- Digitization refers to all the steps involved in making connections of historical and other material available online.
- The term Digitization primarily refers to the process of translating a piece of information such as books, sound recordings, pictures and video into bits:
- BITS: are the fundamental units of information in a computer system

# PRINCIPLES OF PRESERVATION AS APPLIED TO DIGITAL PRESERVATION

Longevity

Quality  
aspects

Integrity

Accessibility

Choice

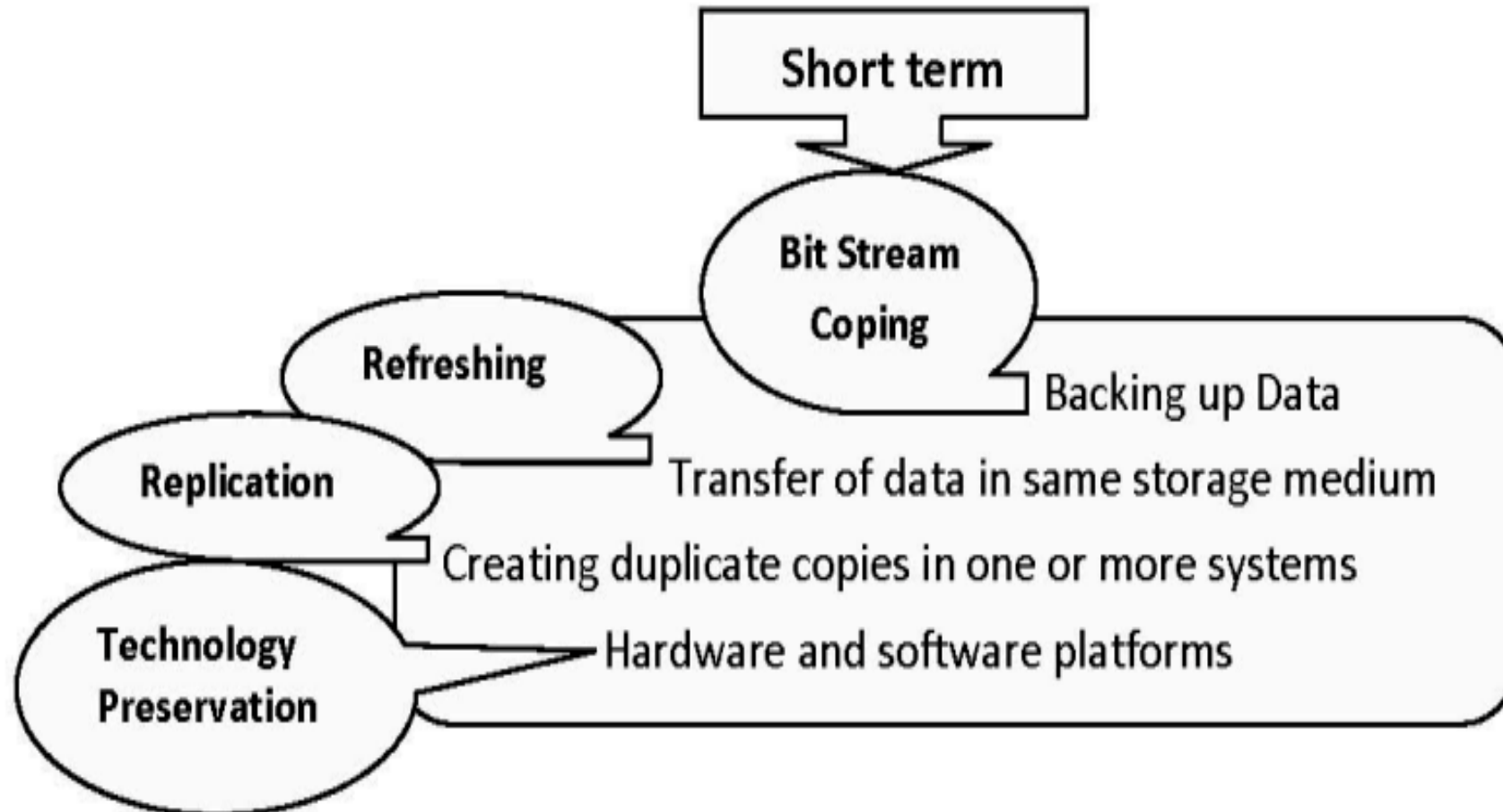
# FACTORS OF DIGITAL PRESERVATION

- Lack of awareness
- Obsolescence of Computers, Devices & Programmes
- Copyright and IPR
- Tools and standards used
- Costs and funding
- Usability, Accessibility and the Security aspect

# DIGITAL PRESERVATION STRATEGIES



# SHORT-TERM STRATEGIES



# BIT-STREAM COPYING

- Bit stream copying, also known as "data backup" or "mirror image backup," involves creating an exact duplicate of a hard drive or storage media. While it protects against data loss from hardware failures, media decay, or disasters.

# REFRESHING

- Recombining data with migration is vital when software or hardware is outdated. Refreshing data helps prevent decay and media obsolescence by transferring it between identical storage media, such as moving census data from an old CD to a new one, ensuring data integrity.

# REPLICATION

- Replication creates duplicate data across multiple systems, minimizing the risk of loss from failures or disasters. It ensures the longevity and integrity of digital documents.

# TECHNOLOGY PRESERVATION OR COMPUTER MUSEUM

- Technology preservation involves maintaining old hardware and software to keep digital resources accessible, requiring media refreshing and investment in equipment and personnel, often called the "computer museum" approach..

# MEDIUM- TO LONG-TERM STRATEGIES

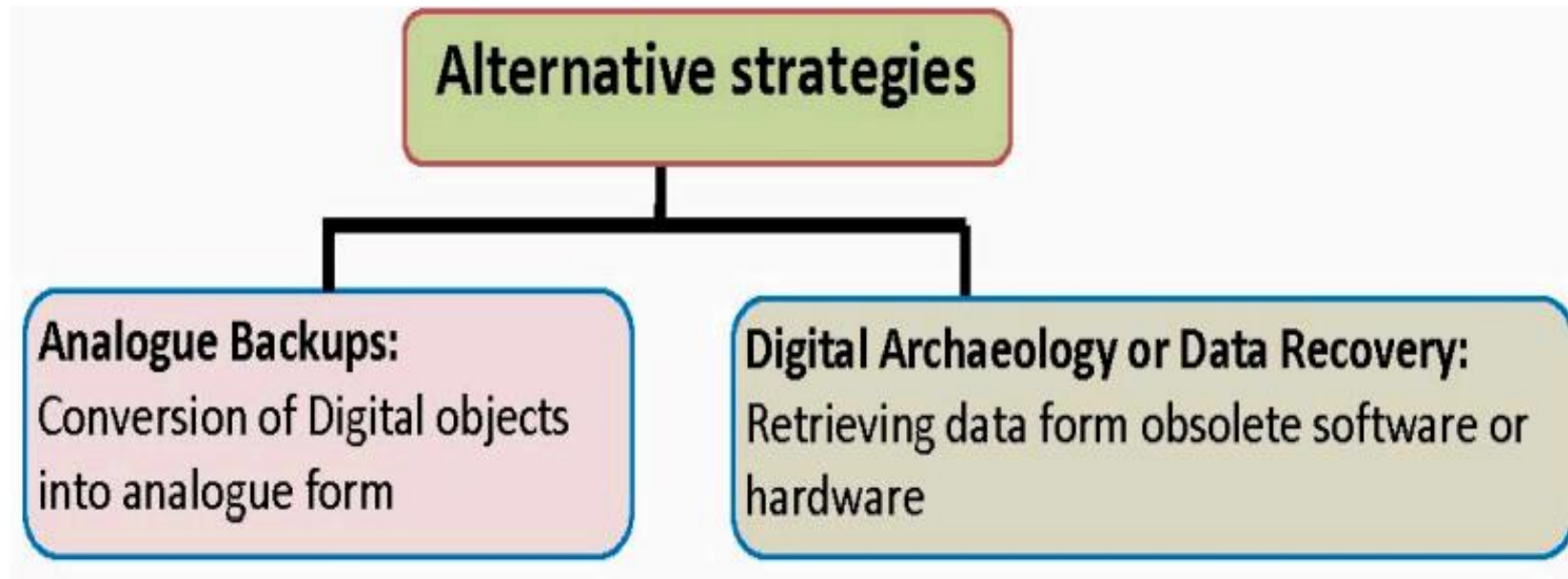
**Migration-**  
One compute  
generation to  
subsequent  
generations

**Emulation-**  
Maintaining,  
functionality,  
Simplify &  
eliminates old  
hardware

**Canonicalization-**  
Manages integrity  
& Authenticity  
from one format to  
another

# ALTERNATIVE STRATEGIES

- Alternative strategies to digital preservation include taking analogue backups of documents (print or microfilm) or recovering data from obsolete digital media.



# PROBLEMS AND CHALLENGES OF DIGITAL PRESERVATION

- Technological Obsolescence.
- Data Integrity and Authenticity
- Complexity of Digital Formats
- Absence of established standards, protocols, and proven methods for preserving digital information
- Technological or economic feasibility of operating on a mass scale

# INITIATIVE TAKEN BY DIFFERENT ORGANISATIONS

## Digital Preservation Centre (DPC)

NDLI has set up its own Digital Preservation Centre at Salt Lake in 2019.

At first, the contents of "Presidency Alumni Association" were digitized there and integrated into NDLI. This features some interesting contents like:

- Presidency College Register consisting list of graduates from 1858-1925.
- Oaten on Netaji - Poem by the Professor of History on Subhas Chandra Bose.
- Bankim Chandra Chattopadhyay, one of the first Graduates of Presidency College, marked absent in the attendance record of the class of 1858-59.
- Volumes of the journal by the alumni, "Autumn Annual", edited by Late Nabanita Deb Sen.

After that, the issues of the prestigious Bengali science journal "Jnan O Bijan" were digitized. Bangiya Bijan Parishad is a science organization founded by Satyendra Nath Bose in 1948. Since inception, Bangiya Bijan Parishad publishes a monthly journal of popular science in Bengali, called "Jnan O Bijan". NDLI is currently hosting all the issues of the science magazine from 1948 to 2020.

Few books contributed by the "Press Information Bureau, Kolkata" are now being scanned and curated, and will soon be integrated into NDLI.

A Bengali translation of "Srimadbhagabadgita", contributed by Udbodhan Karyalaya is ready to be integrated.





## Preservation

- The National Archives of India is making earnest efforts to ensure longevity to documents in its custody through preventive, curative and restorative processes.
- The Department has Conservation Research Laboratory which was setup in 1941. Since its inception, it is engaged in research and development work like developing indigenous technique for restoration, testing of materials required for restoration and storage. The Laboratory is equipped with latest models of Paper Testing Machines viz. Tensile Tester, Folding Endurance Tester and Bursting Endurance Tester etc to facilitate examination of various kinds of preservative material. A unique process of repairing and rejuvenating documents with the help of cellulose acetate foil and tissue paper which is known the world over as Solvent or Hand Lamination process has been invented by the Department.
- The Laboratory has been successful in formalizing a process for rejuvenating dessicated palm leaves caused by age and loss of flexibility.
- Another very significant achievement has been fabrication of a portable thermostatically controller airtight vault which is a multifunctional chamber and could be used for sterilization, vapour phase de-acidification and drying of documents, books and other material.

## Preservation

[Preventive conservation](#)

[Curative Conservation](#)

[Restorative conservation](#)

[Storage](#)



# Raja Rammohun Roy Library Foundation

## Ministry of Culture, Government of India



Ministry of Culture  
Government of India

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### RRRLF Digital Library Initiative

Digitizing of rare books, including pre-Independence newspapers, journals and other documents housed in public libraries will be taken up and a Digital Repository will be created for providing access to all stakeholders to digitized documents. Selected copyright-free materials, including paintings, photographs, manuscripts etc., available in public libraries will also be digitized and will be made available to the public. This National Digital Repository will be progressively developed to contain metadata of all rare materials available in public libraries in India as well as the Digital version of the copyright-free Works as part of National Digital Preservation Programme. This Digital Repository will also host contents on Libraries, Library System & Services and Library Development in India.

### Completed Projects

#### Ramakrishan Mission Library, Delhi Branch



Digitization of approximate 800 copyright free of the Ramakrishan Mission Library, Delhi Branch.

## Digital Collections

### Featured Content



Historic American Buildings  
Survey/Historic American  
Engineering...



Chronicling America:  
Historic American  
Newspapers



Farm Security  
Administration/Office of  
War Information ...



Cities and Towns



Civil War Maps



# Preserving our collections

A fundamental role of the National Library is to preserve Australia's documentary heritage, and to make sure it is available for people to use for as long as possible. Collecting material is only one step towards achieving this - the material also needs to be looked after if it is to remain useable. The aim of the National Library's preservation program is to maintain and preserve items according to their use and their significance.

The National Library's preservation role is guided by its key objective to preserve and maintain all Australian and significant non-Australian library materials to ensure they are available for current and future use. This objective applies to both digital and non-digital information resources, although the Library recognises that it will use different methods and draw on different skills, procedures and partnerships, for managing digital and non-digital collections.

## Preservation

The aim of the National Library's preservation program is to maintain and preserve items according to their use and their significance. The Library uses different methods and draws on different skills, procedures and partnerships to manage the preservation of both digital and non-digital collections.



## COLLECTIONS

### Preserving our collections



Preservation

Building our collections



Guide to selected collections

History of the collection

Describing our collections

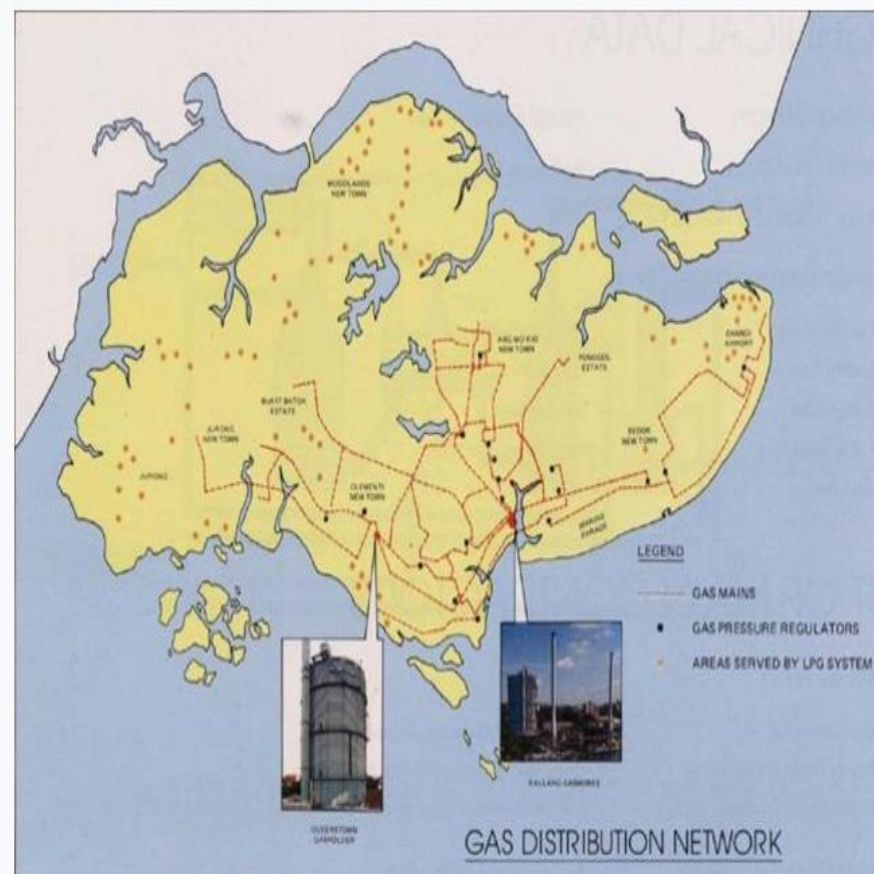
Acquisition methods

# Gas distribution network in Singapore, circa 1982

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PRINT

📄 Download



Share



# KEY TAKEAWAYS

- Digital preservation is crucial to ensure the longevity of digital information.
- It involves addressing technological, legal, and financial challenges.
- A combination of strategies offers the best results.



WORLD WORLD  
DIGITALION DAY  
DAY

015 DIGITALS  
DAY

WIGILD  
PRISTIAL  
DAY

WORLD DIGITAL  
PRESERVATION DAY  
**7** NOVEMBER

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