

DIGITAL TRANSFORMATION OF MANUSCRIPTS A SOURCE FOR CONSERVATION OF HERITAGE & CULTURE

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Abstract

A digital manuscript is a virtual product that reproduces a tangible object in its entirety. This includes the proper sequencing of images. The digitisation of books that are in high demand could help avoid over-handling. A digital copy enables more than one researcher to work on the text at the same time, while protecting the physical book. There are many well-known benefits of digitization, like increased efficiency, easier collaboration, and enhanced accessibility. However, there is one benefit of digitizing documents that is often overlooked — the ability to free up physical space.

Introduction

Digitization is an electronic process of converting information from an analog format such as text, manuscripts, journal articles, images, paintings, maps and audio-visual materials to the digital format. Digitization is a high-speed data transmission technique. Digital preservation is preserving the digital medium that holds the information by storing it in the correct environment following the state - of - the - art handling procedures. The purpose of preservation is to ensure protection of information of enduring value for access by present and future generations. It refers to the various methods of keeping digital materials alive into the future (Thiyam Satyabati Devi, et al) 7. Traditionally, Libraries and Information Centres (LICs) strive for collection, organization, storing and dissemination of information in print and other communication media for use. However, the impacts of information and communication technologies, more specifically the digital library concept, brought in revolutionary changes in the conservation and preservation of recorded knowledge and resolve many of the associated problems. Hence, the contemporary LICs adopt the technology for partial or complete digitization.

Definitions of digital preservation

A. Bullock¹ viewed digital preservation as "the means of taking steps to ensure the longevity of electronic documents. It applies to documents that are 'born digital' and stored online or to the products of analog to digital conversion".

"Digital preservation refers to a series of managed activities designed to ensure continuing access to all kinds of records in digital formats for as long as necessary and to protect them from media failure, physical loss and obsolescence". (Cornell University Library)

Need for preservation

According to Yogesh R Parekh, et al⁵ (2009) the traditional preservation characterizes activity that is concerned with 'rescuing the decaying organic materials of value' or with longevity of physical qualities of documents. However, digital preservation is not confined

only to the preservation of material but offers access to the same trespassing space and time boundaries. Digital preservation methods include the use of emulation, or re-creation of original, using hardware and software to interpret the sources, refreshing, migration and reformatting, data archeology, encapsulation and output to the analog media. Digital preservation can, therefore, be seen as the set of processes and activities that ensure continued access to information to all kinds of records, scientific and cultural heritage existing in digital formats.

Cultural Heritage of India and its Preservation

India is an ocean of humanity in which several streams of philosophies, religions, cultures, languages and practices have been assimilated over ages. The nation's cultural heritage comprises of its diverse scientific contributions, literature, worships, temples, architecture, pilgrimages, celebrations, dance forms, social, home traditions, finally arts and culture (Nagnath R. Ramdasi) 6.

According to Ramesh C Gaur⁴ the glorious past of Indian culture lies in the ancient manuscripts. These historical evidences have great research value. India possesses more than five million manuscripts, making one of the largest repositories of manuscript wealth in the world. They are written on different kinds of materials like birch bark, cloth, palm leaf and paper. These manuscripts are in the custody of different institutions like libraries, museum, mutts and individuals. Only a small percentage of these manuscripts have been surveyed and catalogued. Though our ancestors have tried to preserve these manuscripts, thousands of such valued unpublished Indian manuscripts on various subjects are lying scattered or fragmented in Indian libraries and some of these are no longer accessible to research scholars.

Manuscript

Manuscript means something that is hand written.

which has scientific, historical, literary or aesthetic value and
This is at least seventy-five years old.

Manuscript in India

Indian manuscripts are the richest collection of written documents, texts and scripts. These written documents provide information on the existence of different civilizations and emphasize the importance of their survival. The manuscripts are available in different types and comprise various themes, textures and aesthetics, scripts, language, calligraphies, illuminations and illustrations. The major manuscripts are written in Sanskrit language. There are 39,300 scripts are written in Grantha, Devanagari, Nandinagari, Telugu script.

Need for digitization of manuscript for preservation of cultural heritage

India is the home of world's 'great civilizations' with a social structure that can be traced back for thousands of years. . Cultural heritage materials have a lot of importance, as culture is something we do, the performance which fades into memory then disappears,

but the record of culture consists of artifacts which we make, which may persist but inevitably decay.

Selection of Manuscript

Dr. V.S. Krishna Library, Andhra University is one of the resourceful libraries in India. It is having 561 manuscripts in various languages. Out of 561 paper manuscripts, in Sanskrit (499), in Telugu (41), in Bengali (13), Grantha Script (1), Prakat (3), Tamil (2), Pali (1) and English (1). Two types of manuscripts have been selected randomly from the total collection for pre test. 9

Manuscript

Title: Gopalahasranamani

Physical Description: 28 p., 7 lines per page and 25 letters per line, 25.5x 11.5cm

Note: It was originally in Sanskrit

Subject heading: Stotra

General Procedure for digitization

The general procedure adopted for digitization of selected items includes:

Preparing the document

Preparing for scanning:

Scanning parameters:

Scan the page

Editing:

Storage

Scanning Procedure

Manuscript – Gopalahasranamani

Original scanned image of manuscript

Scanning Procedure

The scanned image was previewed and the image was saved, given the file format name as JPEG. After the initial scanning process, using the Photoshop techniques original scanned image was adjusted by cropping for getting the image straight. In the revived image of the manuscript, brightness and colour contrast was adjusted for clarity i.e. brightness was adjusted to +29 pixels and contrast was adjusted to -24 pixels, so that the picture is very clear for viewing.

The page of the manuscript was scanned in 300 resolutions. The width is 2352 pixels, height is 864 pixels and total pixel dimension is 5.81M. The brightness was adjusted with colour contrast to +14 and +12 pixels respectively for getting clarity and the image was saved.

The page of the manuscript was then scanned in 600 resolutions. By increasing the resolution the total pixel dimension is also increased from 5.81M to 23.3M; width is increased to 4704 pixels and height is increased to 1728 pixels. The brightness was adjusted to +27 pixels and colour contrast was adjusted to +27 pixels for getting the clarity of the image.

Then the page of the manuscript was scanned in 1200 resolutions. The total pixel dimension is increased to 93.0M; 9408 pixels width and 3456 pixels height. Adjustment has been made for the brightness and colour contrast to +32 pixels and +23 pixels respectively for getting the image much clearer. The manuscript has been photocopied, and the Xerox version of the manuscript was scanned. The brightness and colour contrast was adjusted to -5 pixels and +40 pixels respectively for getting clarity.

Interpretation

The above study indicates that the clarity of the Original image and b/w images were clear for viewing. By increasing the resolution the length of the image was also increases that increase the clarity. However, the size of the document can be adjusted at the time of reading.

Conclusion

Preservation in the digital world is a challenging task for librarians and archivists. Due to lack of understanding of digital technologies, selection criteria and appropriate preservation options the digitization projects are moving at a slow pace. However, technologies involved in digital preservation have been well defined. The available technologies are capable to support the requirements for the long-term preservation.

Developments of techniques for digital preservation underwent a significant change in terms of their features and costs. There is constant progress in developing techniques and librarians have to make use of them in preserving the rare, copy left documents. Such attempt will bring more visibility to hitherto preserve and sparingly used rare documents. Indeed utilization is the ultimate measure for created knowledge.

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