

INFRASTRUCTURE REQUIREMENT FOR DIGITISATION OF MANUSCRIPTS AT BAMUL

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ABSTRACT

Digitisation of manuscripts aims to stimulate a responsible approach to the sources from which our historical consciousness grows and to contribute to the general availability of information about our history and culture. The project plan aims to initiate and to support the safeguarding of existing documents not only for this generation but also for the future ones.

The present paper seeks to outline some of the issues surrounding digitisation at the moment. It does not attempt to provide complete solutions or recommendations regarding hardware, software, resolutions, etc. Instead it provides recommendations applicable to the strategic planning level, with particular reference to the Dr. Babasaheb Ambedkar Marathwada University Library, Aurangabad.

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0. Introduction

Etymologically the word manuscript has been derived from the Latin word "manus" meaning hand. According to Oxford English Dictionary, old English has the word "manuscribe" to denote writing with one's own hand as opposed to printing.

Manuscripts, unquestionably are invaluable sources for the reconstruction of the history and culture of the country. These reveal their contemporary society & provide vital link to culture and Knowledge.

Manuscripts exist in various forms apart from stone, iron and copper encarvings Manuscripts are also on parchment, papyrus, vellum, cloth & paper.

Marathwada University established in the year 1958, along with its library was renamed as Dr. Babasaheb Ambedkar Marathwada University in January 1994. The Dr. Babasaheb Ambedkar Marathwada University Library (BAMUL) has a total collection of more than 3 lakh books, subscribes to 400 journal titles. It has in its collection more than 5000 manuscripts.

1. Need for preserving the manuscripts

BAMUL has acquired manuscript collection from Raje Shamraj Bahadur of Hyderabad as well as by visiting different temples & persons in Marathwada region. The subject contents of manuscripts in BAMUL are religion, medicine, local history, culture etc. of the different centuries.

Considering changes in ownership and location, theft, destruction of countless and priceless treasure due to natural hazards and biological agents, vandalism etc. it is highly impossible to purchase medieval and renaissance manuscripts, hence it has become important to preserve old documents like manuscripts.

Preservation of manuscripts depends on-media on which manuscripts exist, size of manuscripts, its thickness, brittleness, age, degree of discolorisation, decaying rate.

In BAMUL, the manuscript collection represents history and culture of different centuries. They are age old, becoming brittle, decaying at a very fast rate due to tropical environment, losing original colour, hence it is high time to preserve such invaluable collection.

2. Alternatives to preserve manuscripts

Manuscripts are to be preserved for dissemination of information contents to the users in general & researchers in particular.

The different alternatives for preserving manuscripts are:

Many efforts were made to reproduce manuscripts in photostatic copies before microfilming came into general use. To preserve original, manuscripts are being xeroxed and given to users as and when they want it.

Microfilming is a preferred method for long-term storage. It is economic in transportation, retains original beauty of text and pictures. However, having microfilming laboratory is a costly affair.

Digitisation is transforming input data in any physical form into digital form of computer processing. Digitisation is the best alternative for dissemination of information globally. It solves space problem. Computer has become digital imaging workhorse because it is more efficient and effective to create images on computer than to use traditional methods.

It is easier to perfect, digital images and integrate them with text. Scanned images are better than original. Scanned images can be indexed, stored, linked & retrieved globally.

Considering various alternatives for preservation of manuscripts it can be said that digitisation is the best alternative for storage, preservation, search and retrieval in the age of information technology.

3. Digitization of manuscripts projects in U.S.

Celtic and Medieval Manuscripts - One-year pilot project was undertaken with four-year continued support by HEFCE. 44 rare & fragile Celtic manuscripts (16000 folios) from Boldeian & Jesus College were digitised & are being made available via the WWW with thumbnail images and descriptive cataloguing is derived from existing printed sources.

The continuation project comprises medieval manuscripts from Boldeian Digby collection and 70 manuscripts each from six Oxford colleges. Both these projects are based on the model of high resolution, peripatetic digitisation service to libraries, using good conservation handling methods, in which image capture equipment is transported to the manuscript than the manuscript to the equipment.

Considering success of this project in U.S., it was thought that such project could also be undertaken at BAMUL.

4. Digitization of manuscripts project plan for BAMUL

The Manuscript Digitization Project Plan for BAMUL is divided into two phases as follows:

1. Phase I

The following points would be considered in this phase:

- i. Selection of samples and producing test images
- ii. Preservation-quality images: types and resolution, enhancement, grayscale and colour
- iii. Image Compression
- iv. Defining and deriving access-quality images
- v. Hardware for scanning

2. Phase II

Production Phase

In Phase II, actual work would start for the digitisation of the manuscripts. The manuscripts would be scanned with the suggested type and resolution and then the images would be compressed and stored in the archival storage. To link the images from point to point, programmes will be prepared by using HTML & Microsoft FrontPage packages. The access would be given by the WWW browser to the end users.

5. Tools required for digitization of manuscripts

Primary tools required for digitization of manuscripts are:

- Hardware

- Software

5.1 Hardware

a) Computer:

Since the power of digital image creation lies in computer, speed of computer is of vital concern

- CPU:** It is the computer's brain. Primary task of CPU is to receive programme instructions, process and send them. CPU's speed and sophistication in managing information is crucial to the efficient use of programmes like Adobe Photoshop. Most sophisticated CPU is Pentium III with 733-800 Mhz.
- PCI Bus:** Computer does not work alone. It processes the information flowing to and from it over a data highway called BUS. Now a days bus speed is increasing faster.
- Ethernet:** - It is a network protocol. It allows data to be transferred to printers and other computers faster, than data sent over standard serial port. It speeds up the process 3-5 times faster.
- Silicon Graphics:** Prepress house can be used to have high quality output. It is used for effects. It can transform a wire-framed model into photo realistic 3D object.
- RAM:** Digital images and digital imaging software can quickly gobble up the entire RAM in the system. It must be realized that without enough RAM, it is not possible to load or create digital image of the size and number of colors we wish.

b) Storage devices

Digital images are voracious. In no time they eat up all the space on the system disk. For working in digital imaging field, one has to have enough capacity for storage, editing, backup, archive etc.

- Hard drives:** Graphic professionals recommend a minimum of 500MB storage space for graphic system depending on the type of work. Speed of hard drive is measured by seek time and by transfer rate. Faster the hard drive lower the seek time.
- Removable hard drive:** It can be used for backing up digital images & storing files.
- Optical drive:** It can store data between 500MB - 1.3 GB.

- iv. **DAT drive (Digital Audio Tape):** It is one of the most economical media to store data. It can be 60, 90, or 120 meter in size. It can store 1-2 GB data. Newer models can store up to 8 GB data. With DAT archiving and retrieving data is not fast because information is recorded and accessed sequentially.
- v. **CD ROM drive:** It is an essential peripheral for digitisation. To use a CD ROM, to view photo images, XA (extended architecture) is needed, which enables to add new photo CD images on CD ROM until its storage capacity is full.

While purchasing CD ROM drive, speed needs to be considered.. At present various speed models are available in market.

c. **Monitors**

Monitor's sharpness, size and clarity of colours are crucial to create professional looking digital images. It is suggested to have a 15" monitor with 24 bit colour card.

d. **Digitising devices**

Digitizing devices convert photos, artwork and raw materials of the real world into digital data that can be edited by graphics programmes. The most common digitising devices are:

- ? Scanners
- ? Digital Cameras

i. **Scanners**

Scanners are primarily used to digitise photographs, artwork and slides. They come in all shapes and sizes. Some produce sharp, high quality images while others produce only acceptable images for positioning purposes. There are many types of scanners like Flat bed scanner, Slide scanner, Rotary drum, Quick document scanner, etc.

ii. **Digital Camera**

Digital camera digitises image on a click of button, often storing image to a tiny hard disk or battery powered memory chips. The images are then downloaded to a computer through a cable connected to its SCSI or serial port or they can be sent to a computer over the phone lines.

e. **Out put devices**

Printers, Modem and CD Writer are the output devices

5.2 **Software**

There are numbers of softwares, which can be used for different functions as follows:

- ? For editing images
- ? For page layout programmes : to integrate text and graphics
- ? File transferring utilities: to share files between computer platforms
- ? File translation programmes: to convert files from graphics
- ? File compression software

The recommended softwares are Adobe Photoshop, Paintshop Pro, Frontpage, Imaging professional software, etc.

6. Conclusion

The aim of the present paper has been to inform about the infrastructure requirement for the digitisation of the manuscripts and enabling access through WWW browser at Dr. Babasaheb Ambedkar Marathwada University Library, Aurangabad.

7. References

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