Preservation of Documentary Heritage Collections for Sustainable Development: A Case Study of Khuda Bakhsh Oriental Public Library, Patna

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ABSTRACT
Documentary heritage materials hold historical, cultural, scientific, and social significance which creates the heritage, memory, and intellectual achievement of a nation or society which are essential for understanding the glorious past of a nation and human experience. In an era of technological advancement and evolving social needs, the preservation of historical and cultural treasures becomes paramount. The Khuda Bakhsh Oriental Public Library (KBOPL) located in Patna, Bihar is one of the premier institutions dedicated in the field of preservation of documentary heritage collections. The key purpose of present study is to analyse the all-round activities of KBOPL in digital preservation and maintenance of rare documents available in its repository and initiatives taken for the preservation, conservation and archiving of these rare cultural materials for future generation. Method of study adopted in this paper is survey method collecting the relevant data through survey as well as from the website of the institute for analysis of activities of KBOPL undertaken for the preservation of documentary heritage materials. Findings of the study reveals that the KBOPL has successfully preserved over 21000 rare manuscripts and 2.5 lakh other rare books spanning the ancient to medieval period which are available in different languages and scripts.

KEYWORDS: Documentary Heritage Collection, Rare Manuscript, Digital Preservation, National Mission for Manuscripts (NMM), Khuda Bakhsh Oriental Public Library.

INTRODUCTION

Documentary heritage, comprising manuscripts, books, photographs, recordings, and other forms of recorded knowledge, represents a vital part of our shared human history and cultural identity. The loss of documentary heritage materials has lots of consequences like Cultural Heritage Erosion, Irretrievable Knowledge Loss, Cultural Diversity Diminution and Loss of National Identity. These invaluable records provide insights into our past, shaping our present understanding and informing our future endeavours. Manuscripts are considered as the most important kind of documentary heritage collection and are primary source of information for history and cultural value of a nation. Since years back our ancestors used to inscribe their ideas on the rocks, clay tablets, metal plates with hard stylus which later replaced by soft birch barks, palm leaf etc. then silk and papers to preserve and transfer the knowledge to coming generations.

Documentary heritage, as defined by UNESCO (2002), is the collection of recorded knowledge and cultural knowledge available in various forms, including rare manuscripts, printed documents, valuable photographs, audio and video recordings, as well as digital contents. The preservation of documentary heritage and making it publicly accessible are of high importance for preserving and safeguarding our cultural values and shared human journey. These records and artifacts carry immense historical, cultural, scientific, and societal value. It serves as a valuable resource for researchers, educators, and the wider public to know the rich history and cultural

importance of a nation. As per UNESCO there are millions of rare manuscripts and other valuable documents available in the world are not very much safe and immuned for long life. In India also the IGNCA (Indira Gandhi National Centre for Arts) has estimated more than five million rare manuscripts in and cultural artifacts in Indian repositories only.

Many original hand written items having immense cultural value are today endangered because of looting and dispersal, illegal trading, deliberate destruction, inadequate storage and lack of funding. As heritage collection are very important source of indigenous knowledge, history, civilization and culture, and they are rare in nature, therefore, proper importance is to be given on maintenance of these material and preservation as well as their utilization.

Statement of the Problem

The preservation of documentary heritage materials, particularly rare manuscripts, is very much challenging. These invaluable recorded knowledge materials play an important role in shaping our understanding of cultural identity and human history. However, protecting these heritage materials from damage and cultural loss is a great challenge to the sustainability of these collections. Despite their immense historical, cultural, and societal value, millions of these heritage documents worldwide, including approximately five million rare manuscripts in Indian repositories alone, face an uncertain fate.

There are numerous global studies have been done in the area of digital preservation with national and international agencies making continuous efforts in this field. But no sufficient literature found concerning research on Khuda Bakhsh Oriental Public Library (KBOPL), Patna. Consequently, this study seeks to fill this gap by examining the key challenges associated with preserving the documentary heritage collections of this library. And this study also analyses the initiatives undertaken by KBOPL to sustainably preserve these heritage materials for the coming generation.

Objective of the Study

Considering the statement of problem and gaps in the study area following are the main objectives of the present study:
- To assess the current status of preservation activities in KBOPL
- To investigate the key challenges in preservation of documentary heritage materials in KBOPL
- To evaluate the initiatives undertaken for digital preservation of documentary heritage materials by KBOPL

REVIEW OF LITERATURE

The National Mission for Manuscripts (NMM, 2003) acknowledges India's possession of an extensive manuscript collection, among the world's oldest, housed in various institutions. However, concerns arise as many manuscripts have disappeared, and a significant number are deteriorating.

Y. V. Ramana's (2005) exploration of digital preservation at the National Library of India sheds light on national-level efforts, underscoring the pivotal role of technology in safeguarding India's manuscript heritage.

Saikia and Kalita (2011) delve into digitizing manuscripts at Gauhati University's K K H Library, spotlighting the uniqueness of their ancient Assamese, Sanskrit, Bengali, Nepali, and Tibetan manuscripts.

Shafi and Lone (2012) contribute a comprehensive survey of oriental manuscripts, highlighting university libraries' role in preservation and providing historical context.

Singh, A. (2012) in his paper has highlighted the initiatives of Government of India for digital preservation of cultural heritage resources and manuscripts.

 Sinha's (2016) overview of Jain manuscripts recognizes their cultural importance and suggests measures for safeguarding them.

Tyagi's (2022) study on indigenous manuscripts in Rajasthan serves as a practical case study, assessing preservation techniques.

Gaur and Gandhi's (2011) comprehensive overview emphasizes Bihar's initiatives, proposing a National Manuscripts Library at IGNCA.

RESULTS

Digital Preservation

Digital Preservation Coalition (2015), a non-profit organisation, defined Digital Preservation as "The series of managed activities necessary to ensure continued access to digital materials for as long as necessary."

Digital preservation refers to all those bunch of activities which are required for maintaining and ensuring continuous access of the digital contents beyond the limits of time, media failure or technological and organisational change. To achieve this objective it involves finding the way to re-present the information content what was originally presented to users with the help of software and hardware tools acting on data. Digital preservation is more effective usually in a dedicated repository that provides specialist functionality to meet digital preservation requirements. Thus, Digital preservation typically refers to the preservation of digital contents over time.

The most significant threats to digital preservation concerns loss of the means of access. Digital materials cannot be said to be preserved if the means of access have been lost and access becomes impossible (UNESCO, 2009). The purpose of preserving digital materials is to maintain accessibility. The main challenges with the digital preservation are rapid technological change in software as well as hardware, committed resource to manage the storage and maintenance, organizational change, well defined policy and guidelines for the acquisition, preservation and access of digital contents. As more materials are digitized and born digital, the question of how to keep digital objects accessible for future generations becomes increasingly pressing. Institutions must make decisions about which documents to preserve, and if, or how, to preserve the context of the document. The decisions made today will directly impact upon a digital library's ability to meet future user needs.

Need for Digital Preservation of Documentary Heritage

As the historic books and old manuscripts contain the proof of fact, their accomplishments, thoughts and theories which are very essential for the development of present society. It allows us to learn and explore our glorious past and enriches our live with the cultural values. These important documents are decaying or being destroyed by war and natural disaster. Acid paper is also a problem with born digital documents. Without proper attention it might be lost forever. Preservation of this cultural heritage in digital form can provide uninterrupted access to the cultural knowledge in present and future and thus has potential to enrich our live as well as the society. Thus, the rare manuscripts do need proper preservation and conservation for the future generation. After understanding the bare importance of these rare documents containing high cultural values, in India many institutions and government agencies have set up separate divisions and centers for the digital preservation of rare manuscripts to preserve the knowledge scribed in it.

According to NMM (2011) the invaluable heritage of India in the form of manuscripts must be documented, preserved digitally and to be made accessible to the present and to future generations (National Mission for Manuscripts 2011). With this objective and as the part of UNESCO's MoW program, the Government of India (Ministry of Culture) established the National Mission for Manuscripts in February 2003 as an institution in a project mode under the Indira Gandhi National Centre for the Arts (IGNCA) as nodal agency. Mazumdar (2009), in his research, finds that due to the deterioration by law of nature, manuscripts are also getting deteriorating. He has argued in his paper entitled 'Digital Preservation of Rare Manuscripts in Assam' that the digital preservation can recover, restore the rare manuscripts from physical loss and it can also be protected from theft and decay.

Digital Preservation Initiatives

Digital Preservation Initiatives at Global level

UNESCO established the '***Memory of the World Programme'*** with the objective that the world's documentary heritage belongs to all and should be preserved and protected for all. In India, the National Mission for Manuscripts (NMM) has taken the initiative for the nomination of Indian manuscripts for inclusion in the UNESCO's 'Memory of the World Register (1992)'.

'***California Revealed'*** is a California State Library initiative that helps public libraries, archives, museums,

historical societies, and other heritage groups digitize, preserve, and provide online access to materials documenting California's history, art, and cultures. It began as an audiovisual digitization initiative to preserve motion picture film, video tapes, and audio recordings from regional organizations, but has since expanded to include newspapers, scrapbooks, photographs, microfilm, manuscripts, and more.

'Canadiana.org' is a non-profit alliance of major memory institutions in Canada providing access to digitized Canadian documentary heritage.

The Digital Preservation Coalition (DPC) is a non-profit organization which seeks to secure the preservation of digital resources.

The Open Preservation Foundation (formerly the Open Planets Foundation) is a non-profit membership organization which sustains technology and knowledge for the long-term management of digital cultural heritage, providing its members with reliable solutions to the challenges of digital preservation.

Digital Preservation Initiatives at National Level

Seeing the importance of digital preservation, a large numbers of initiatives have been taken by government and different organizations in India also for the preservation of these valuable documentary heritage collections in digital format.

Indira Gandhi National Centre for Arts (IGNCA): The IGNCA project which was launched in November 1985 by the then Prime Minister of India Shri Rajiv Gandhi in the memory of former Prime Minister Smt. Indira Gandhi is the milestone project in the area of preservation of cultural heritage of India. The main objective of this project was preservation of the Indian heritage. The area of work of this project was very wide and it covered documentary heritage as well as art and culture. This Centre has taken a nation-wide project for digital preservation of Indian manuscripts stored in different parts of the country. Kalasampada is a digital repository under the IGNCA developed to encompass and preserve the rare archival collections of IGNCA. The holdings of Kalasampada are more than one lakh rare manuscripts, over one lakh rare books, thousands of rare photographs and large number of audio-video materials. IGNCA has also extended its support to different other agencies working area of preservation of rare documents.

Some of the benchmark tasks executed by this centre are:
- Digitization of rare manuscripts, paintings and photographs at Vishva Bharti, Shantiniketan;
- Digitization of Sanskrit and Persian manuscripts at National museum, New Delhi,
- Digitisation of Ganjuur and Dhanjuur manuscripts at the National Library of Mongolia;
- Digitization of manuscripts at Shri Pratap Singh Library, Srinagar,
- Digitization of manuscripts at AllamaEqbal Library, Srinagar
- Digitization of Sanskrit and Persian manuscripts at Oriental Research Library, Srinagar.

Apart from the above benchmark projects this Centre (IGNCA) has digitized a number of manuscripts in other part of the country.

National Archives of India (NAI) Initiative: The NAI is basically a custodian of all record with enduring value of Government of India. It was established in the year 1981 at Kolkata as Imperial Record Department and later on it shifted to New Delhi after independence. To include the rare manuscripts in its repository, a pilot project for digitization of rare manuscripts was initiated in July 2000 by National Archives of India**,** in collaboration with Department of Science and Technology and National Institute of Advanced Studies, Bangalore. Initially, under this project, some rare manuscripts, viz. Bhagwadgita, Ramayana, Mahabharata, etc. were digitized and stored in CD form and this was a great launch for digital preservation. As of now a total of 4, 33,119 digitized collections are available online in its repository which can be accessed publicly by a dedicated portal "***Abhilekh-Patal***" (http://www.abhilekh-patal.in/jspui/).
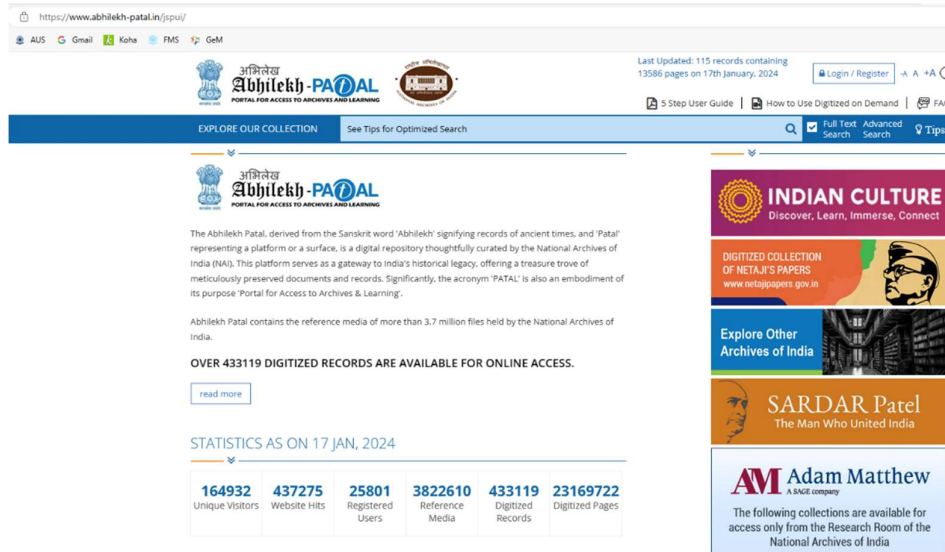
Figure. 1: Website of 'Abhilekh-Patal', digital repository of NAI (image source: Abhilekh-Patal website)*National Library of India Initiative*: National Library, Kolkata has large number of rare documents including manuscripts and 200 year old newspapers in its collection. As one of the major functions of a National Library of any country is to build the collection of national intellectual and cultural heritage and also preserve it for the future. Therefore, with this objective, the National Library of India has started the project of digital preservation of its valuable heritage collections for future generation and to facilitate the easy access of these rare documents to the researchers and scholars by putting it on public domain. The National Library of India poses about 3600 rare and historical manuscripts in different languages and scripts. There is a separate division in the library, called Rare Book Division, for preservation and conservation of manuscripts and other rare documents. The library has initiated a unique digitization programme which is known as 'Down the Memory Lane'. The main objective of this program was to digitize these manuscripts along with other rare documents, from its collection including old heritage newspapers aged between the years 1793 to 1947.

*The **National Mission for Manuscripts** (NMM)*, also termed as NAMAMI, is a unique project of Government of India established in the year 2003. Its main objectives were to survey, locate and conserve the Indian manuscripts, with an aim to create a 'National Resource Base' for manuscripts, for enhancing their access, awareness and use for educational purposes. It was established under the Ministry of Culture, Government of India and the nodal agency for this project is IGNCA. The Mission has the mandate of identifying, documenting, conserving and making accessible the manuscript heritage of India. It is involved in the preservation and conservation of Indian manuscripts available in all over the country and creates the national database of these manuscripts which are accessible online through Bharatiya Kriti Sampada website (pandulipipatala.nic.in).
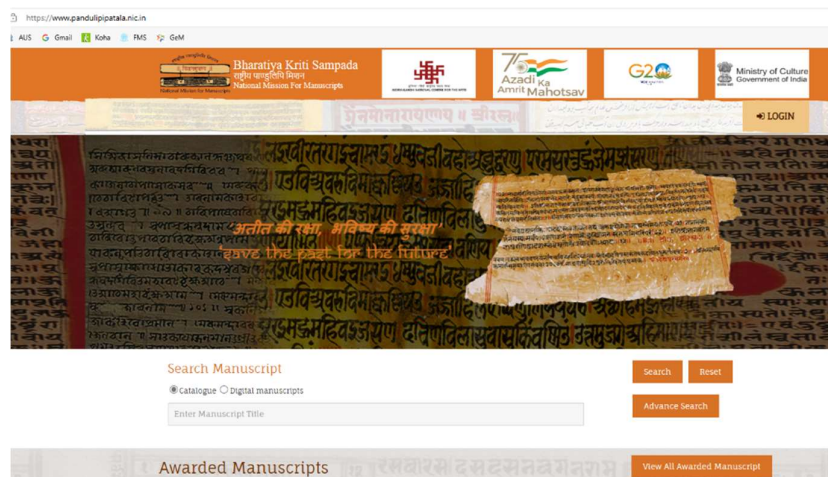

Figure 2: Website of BharatiyaKritiSampada portal of NMM (image source: NMM website)

Khuda Bakhsh Oriental Public Library: Pride of Patna

The Khuda Bakhsh Oriental Public Library (KBOPL), located near the bank of Ganga River in Patna is the pride of Patna city in terms of historical and cultural knowledge centre. The library was established in the year 1888 and was opened to public by Khan Bahadur Khuda Bakhsh, the son of Bihar and the founder of this library in 1891. The idea of opening a public library was passed to him by his father on death-bed Maulvi Mohammad Bakhsh as his last wish.

Khuda Bakhsh Khan donated his entire personal collection, which include 1400 rare manuscripts received from his father, to the people of Patna by a deed of trust. Acknowledging the immense historical and intellectual value of its collections, the Govt. of India declared this library as an Institution of National Importance in the year 1969 by an Act of Parliament. Now the library is fully funded by the Ministry of Culture (Govt. of India).

*Figure 3: Main building of Khuda Bakhsh Oriental Public Library, Patna (image source: KBOPL website)***Rare Collections of KBOPL**: The library has a unique repository of about 21000 oriental manuscripts in different languages like Arabic, Persian, Turkish, Urdu, Hindi and Sanskrit. These manuscripts are written on different materials especially on Palm-Leaves received from different sources. The collection at KBOPL includes wonderful illustrated arts of Iranian, Mughal, Central Asian, Kashmiri and Rajasthani schools besides the Calligraphic Masterpieces.

It also contains about 2.5 lakh printed books in different languages covering different subjects. Another important part of the collection includes about 3,000 epistles of eminent literary personages.

Vijnananidhi (Manuscript Treasures of India): It is a pride for the state that the NMM has identified 4 manuscripts of this library (2 in Arabic & 2 in Persian) highly important and declared as part of VIJNAN NIDHI (Manuscript Treasure of India) in the year 2006. These are: i) *Kitab al-Hashaish* (Arabic), ii) *Kitab al-Tasreef* (Arabic), iii) *Diwan-i Hafiz* (Persian) and iv) *Tarikh-i-Khandan-i-Timuria* (Persian). One manuscript i.e. Tarikh-i-Khandan-i-Timuria has also been included in the UNESCO Memory of the World Register in 2011.
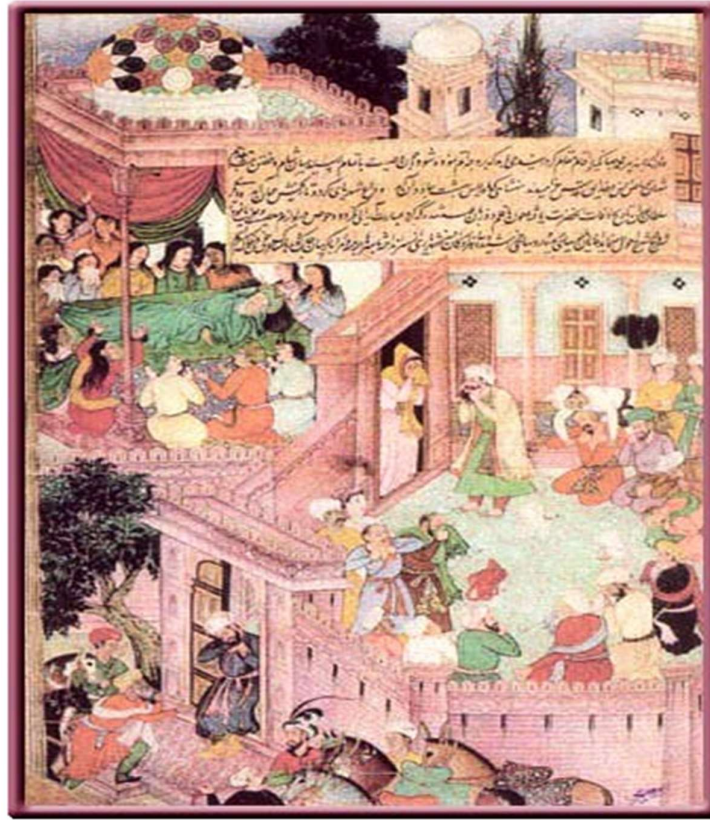
Figure 4: A leaf from the richly illustrated rare and unique manuscript Tarikh-i-Khandan-i-Timuriyah (image source: KBOPL website)

Process of Digital Preservation

'Digitization' is the process of converting target materials in to digital format where as 'Digital Preservation' is a process or the series of managed activities necessary to ensure continued access to digital materials for longer period.
To achieve this it involves finding the way to re-present the data what was originally presented to users by combination of software and hardware tools acting on data.

The KBOPL follows the NMM guidelines for digitization process. Various steps involved in digitization process are:
a. **Selection of target materials:** when selecting the target material for digitization it is important to see the condition of the material, its demand for digitization and the content of the material.

b. **Treatment/Conservation/Handling of materials:** after selection and knowing the condition of the materials, it goes through treatment like cleaning with standard conservation techniques, sequencing of materials and conservation. During handling the materials proper care should be taken to avoid damage. Scanner/Camera operator should wear the surgical gloves.

c. **Selection of equipment: It** is also important to select a proper equipment for digitization to get a quality output.

d. **Image Capture/Digital conversion:** Selected materials are transformed to bit-mapped images by scanner or digital camera. The resulting digital files, containing the binary digits (bits) for each pixel, are then formatted and saved in Tiff format as per required specification. Since manuscripts available in KBOPL are of different materials viz. paper palm leaf, birch bark, cloth etc., and of different feature like illustrated, non-illustrated, hand written, printed, paintings etc. During image capture all these characteristics of the manuscripts should be taken in to consideration according to the type of materials. Illustrated materials should be scanned separately. Resolution and bit depth of image will be different for different materials.

e. Digital Image processing and cleaning: After capturing the image, the original raw images are saved as per Master Image Specification as per preservation policy then processed to remove and cline the dirt, water marks, worm marks, noise, shadow on the scanned document and other scratch marks. Then adjustment of brightness and contrast, gamma correction, removing patterns and adjusting colors are also the part of image processing. Compression is normally used at this step to reduce the file size of digital images.

f. Storage/Integration of digital image: After cleaning of raw data it is saved in proper storage device/system for short term or long term. All image files that are produced by a digital image project must be organized and stored in a way that fits the purpose of the institutions project.

g. Metadata creation: After cleaning process and storage it is important to create the metadata of the item for giving meaningful approach to the item. As per the NMM guidelines subject metadata for a manuscript must include I) Material type, ii) Title, iii) Other title, iv) Author, v) Organization name, vi) Commentary vii) Commentator name, viii) Script and language, ix) subject x) complete/incomplete, xi) bundle number, xii)folio number, xiii) material, xiv) pages, xv) illustration xvi) condition, xvii) source, xviii) manuscript date etc. which are according to Manusgranthawali software.

h. Retrieval: Digitization is incomplete unless the digitized materials are retrieved as and when required using the metadata. Digital data can be retrieved by developing a search engine which can be used to select the material.

i. Migration Policy: As per the NMM policy no manuscript will be relocated or transferred for digitization if the numbers of manuscripts are more than 100. If it is less than 100, it will be transferred to the digital lab only after the prior permission of the competent authority.
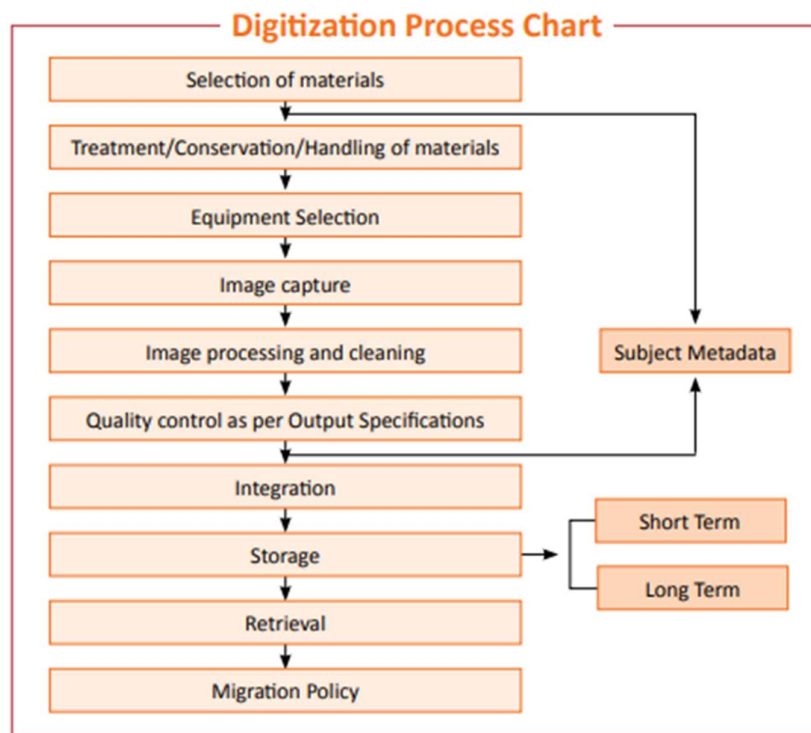

Figure 5: Flow diagram of digitization process (Source: namami.gov.in)

Digitization Activities at KBOPL

Digital preservation is usually done most effectively in a dedicated repository that provides specialist functionality to meet digital preservation requirements. The main concern of digitisation is to make the digital copies of manuscripts as much as possible so that the indigenous knowledge can be preserved for the future before it is lost forever.

The digitization work of about 1200 manuscripts of the KBOPL was started in September 2005. Initially the digitization work was done by NIC. The functional objectives of digitization were mainly to improve and enhance

access, preventing physical damage caused by frequent handling and making digital copies of the manuscripts accessible to researchers and scholars in future. At present about 1,214 rare manuscripts, covering a little over 3,57,915 folios have been completed and made available for use by readers. These can be read on computer screens within an e-reading room as in-house facility of the library.

KBOPL is also the partner centre of NMM since 2006 as MRC and MCC. For this purpose the library has also coordinated with NMM for digitizing the manuscripts with latest technology and uploads it in the library's repository as well as in the NMM portal to preserve the digital content and make it accessible throughout the country in the long run. Most of digital copies of manuscripts are available online which can be accessed through library's website as well as the dedicated portal of NMM called 'BharatiyaKritiSampada'. The main challenge in this project is the issue of copy right which lies with the manuscript holders.
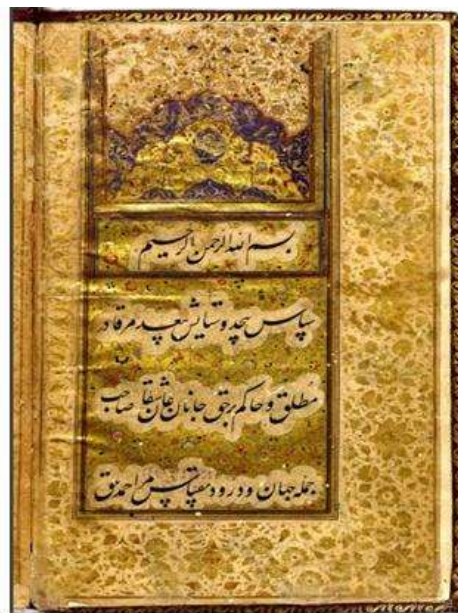

Figure 6: Sample of scanned pages of manuscripts with description. (Image Source: KBOPL website)

Cataloguing of Collections

The library has been maintaining language wise card catalogues in an alphabetical manner for books whereas for manuscripts descriptive catalogue is maintained. Compilation of descriptive catalogue in the library was initiated by Lord Curzon the then Viceroy of India. Since then to till date all 43 volumes (14 Persian and 29 Arabic) of descriptive catalogues have been compiled and published. Besides, 10 volumes of hand lists (4 in Arabic, 5 in Persian and 1 in Urdu) have been also compiled, printed and hosted in library website.

For online cataloguing of manuscripts the library follows NMM's **Three Standard Formats method** *i) Questionnaire; ii) Cat-Cat; and iii) Manus.* Questionnaire is to collect the vast data of manuscripts available in different locations of the country. 'Cat-Cat' is Catalogue of manuscript catalogues published by NMM in volumes whereas 'Manus' is the a software for cataloguing of manuscripts where detailed information of manuscripts such as title, author, language, script, name of the repository, commentary and date, number of foils and pages and other relevant information are entered in the data sheet.

FINDINGS AND CONCLUSION

The findings of the study highlight the Khuda Bakhsh Oriental Public Library's (KBOPL) commendable efforts in preserving highly valuable rare heritage documents. The library has successfully preserved the historical and cultural knowledge embedded in these documents through a combination of traditional and digital preservation methods. While employing climate-controlled storage for physical materials, KBOPL is making strides in adopting advanced digital preservation practices, marking a transitional phase in its preservation strategies. However, challenges persist, including insufficient funding for cutting-edge technologies, the need for specialized

training in digital preservation, and the ongoing threat of environmental factors impacting physical manuscripts. The study underscores KBOPL's noteworthy digital preservation initiatives, involving systematic digitization projects and modern technologies to create digital archives. Cataloging efforts further ensure improved accessibility, with the overall digital preservation process aligning with international standards.

In conclusion, Digital preservation of the heritage collection is very much essential for getting continued access of these historically and culturally rich information materials in future. Digital preservation is only the way to protect the valuable and indigenous knowledge for the future generation. Khuda Bakhsh Oriental Public Library is one of the most important repository dedicated to preservation of documentary heritage collection in Bihar. It has preserved more than 21000 rare manuscripts and 2.5 lakh other rare books of ancient to medieval period in different languages and scripts. The manuscripts available in the repository are mainly in Arabic, Turkish, Persian language. It is also remarked as one of the finest collection on Moslem Literature in the world by many foreign orientalists. Although the present status of the works done so far by KBOPL is not satisfactory because it has not completed the digitization of 100 percent manuscripts in its repository, but the initiatives taken by the library are really great in terms of preserving the documentary heritage of the state as well as of the country. Apart from this there are several unidentified and unprocessed manuscripts are available under personal custody and religious places which requires urgent attention to preserve the indigenous knowledge and cultural heritage of the state.

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