

Digitization: A tool for Preservation and Access: An Overview

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Both digital technology and the discipline of digitization have taken a big leap forward in recent years. With new advances in the technology, digitization has proven to be possible for nearly every title presently held by libraries. The use of hardware and software for capturing an item, coupled with a set of practices for describing and retrieving it, has transformed the way we access and utilize information. Thus leaving enormous space and potential for education, research and intercultural interactions.

In a scenario with limited time and scarce resources, the key to success is timely initiative. Pages of many old and rare documents are losing out to the adversaries of time. These sources must be preserved in their original colors, texture, along with their text and graphics.

The Sikh Reference Library, Amritsar is a good case to study on the issue. It housed thousands of rare source documents, exceptionally important historical manuscripts, *hukamnamas*, archives, artifacts and almost all issues of newspapers since 1876. But on June 7, 1984, Sikh Nation saw their biggest and richest treasure being stolen and torched, at a time when Microfilming technology was available in South-Asia. Unfortunately there was lack of initiative. Now, there is no possible replenishment to this immense loss.

However, having learnt no lesson, tracing history of most of the manuscripts in the Panjab region opens yet another chapter of human indifference towards their upkeep. These valuable manuscripts are incessantly proceeding to the "pyres", on a very wide scale. It is estimated that more manuscripts have been burnt on "pyres" after June 1984 than in that fateful month alone. The rest have survived all odds defying time and age. But they are not immune to the Nature's laws of decay and deterioration. Without digitization, the originals will disappear into the oblivion of history just in a matter of time, with no trace of existence left behind.

This is where digital technology comes into action. In a sharp contrast to the west, the Indian subcontinent has just woken up to this technological reality.

What is Digitization?

It can simply be defined as taking electronic snapshot or scanning of a document, such as photographs, manuscripts, printed texts, and artwork. The digital image is sampled and mapped as a grid of dots or picture elements (pixels). Each pixel is assigned a tonal value (black, white, shades of gray or color), which is represented in binary code (bits, i.e., zeros or ones). The bits are then interpreted and read by the computer to produce an analog version of the original for display on computer screen or printing."

Benefits: The use of digitization can help in the preservation of original manuscripts. It also has the potential to change the way scholars and activists utilize historical documents. Once a document has been digitized, many benefits can be realized, such as: preservation of originals through reduced handling; unlimited data life span; wide availability to the public; ease of access through digital libraries and online access; powerful searching and browsing possibilities; aid in research, education, and awareness programs.

Today access to most of such rare historical documents is quite difficult because of their wide spread distribution throughout the region. Many such collections are still not catalogued or replicated and simply remain unknown. This is primarily due to lack of interest, means, and knowledge. Often stored in poor conditions, these precious articles are

prone to irreparable damage. Further, handling of originals establishes risk of permanent loss, because no duplicates exist.

Digital technology has revolutionized the ability to create electronic replicas of print materials, and institutions around the world are moving ahead with projects to digitize books, manuscripts, photographs, maps, architectural drawing, films and sound recordings in their collections. But Panjab is still in deep slumber.

Digitization Projects can be accomplished in-house or through vendors. In-house digitization endeavors require tremendous input in terms of infrastructure, expertise and experience, which is unfeasible if the project has limited scope and application. It may cost approximately over a million rupees in direct funds for any institution to properly initiate project on its own. One will have to invest on organizational costs, digital cameras, laptops, desktops, software, storage disks, data management, staff training, other studio equipment, contingencies, etc. And all this will be obsolete by the time the project is over. Further, a digitally converted version of a document must be fully functional. If what is digitized is unreadable or poorly indexed, then end users cannot find what they need, or read it when they do find it. In such case, there is a failure to provide both preservation and access, which otherwise requires a particular set of skill to accomplish.

In order to make digitization a success, it is essential that the institution has a clear understanding of its goals. This will guide decision making about work standards and whether the work should be accomplished in-house or outsourced. Nevertheless, there will always be an in-house component to any digitization operation. The institution that holds the material to be digitized must own the responsibility for: selecting material to be converted; determining the purpose of digitization; verifying the quality of the work.

There are arguments, both in favor and against either working in-house or outsourcing. The difference lies in the extent of immediate control needed over the work, range of activities that can be performed, efficiency, economics etc. Relatively few digitization vendors work with libraries and archives. Most work routinely for organizations that want quick and cheap solutions, knowing little about quality control standards in preservation. Luckily, the situation is improving and enterprises with relevant experience are emerging on the scene.

Even if an institution decides to do it alone, it is advisable to get some assistance from a professional organization or vendor to do a pilot program. The aim of the pilot program is to assist the management in establishing requirements and ascertaining efforts involved in terms of time, human and financial resources. This would help establish feasibility of the program and thus assist in deciding on the future course.

Understanding Requirements: To build useful collections of digital resources, the objects must be catalogued so that they are easily accessible. Creation of these digital repositories demands the expertise and collaboration of computer, museum and library professionals.

Universities do not own appropriate digitization equipment and budgets to keep pace with the latest equipment and software. Further, there is often no one in staff with much production-level experience, and it takes time, and unfortunately, learning through failure to build up on experience. Vendors can be trusted to have latest equipment and fully trained staff. They also have a fair idea of what services can be offered and what it costs to provide them. The downside is that the institution is at a distance from the work. If any vendor is willing to bring in equipment to carry out digitization on site, then that will offer some of the benefits of in-house work, e.g., original materials need not travel, closer oversight of the work.

A well-trained flexible staff, some sort of training manual and a clear workflow plan with timelines and built-in goals are the best tools to help managers accomplish their tasks.

These workflow plans may also demonstrate where it might be more economical to outsource portion of a project.

Quality Control Procedures: The procedure involves taking pictures at highest resolution, keeping in view all the factors affecting the color, texture and other attributes of the source document to ensure the closest image representation of the original. Lighting conditions and equipment used are other important factors.

Quality and size of the digital images can be varied, depending on the need and medium of reproduction. TIFF format is used for high quality to enable printability and JPEG format with varied degree of compression for on screen viewing, without loss of visible feature or texture of the original through human eyes. Even PDF format is beneficial and in some cases desirable.

Conclusion:

Digitization carries great promise for the caretakers of history, heritage, culture, art, folk, tradition etc., and many others who are interested in these treasures. In short, preservation through digital technology seeks to achieve longevity of the originals through digital representation with all its original properties intact. This is a daunting task and one not easily tackled or mastered. Best practices and standards are perhaps the best tool to ensure that the collections of separate institutions “speak to each other” in the virtual world, bringing greater value to their users.

Many questions in the field of digital preservation remain unanswered, and many more questions will emerge as technology relentlessly forges ahead with new developments. Whether your institution has the means to preserve only the minimum content of your digital creations or can afford to preserve the whole discovery and display system, policies should be put in place to ensure the long-term sustainability and accessibility of the digital content you have chosen to be preserved.

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