AN ASSESSMENT OF THE DIGITAL PRESERVATION OF MANUSCRIPT COLLECTIONS

The Experience of Topkapı Palace & İstanbul Archaeology Museums Libraries

Nurgül Akcebe and Nil Baydar

Abstract:

The Digitisation of historical manuscripts is the most critical part of the library digitisation programme, given that most of them are rare, valuable, and brittle. In this article, an ongoing digitisation project of the manuscripts in the important libraries of Turkey; Topkapı Palace Manuscript Library and İstanbul Archaeological Museums Library will be presented.

Keywords: Manuscripts Institution of Turkey, digitisation, manuscript, preservation, handling, Topkapı Palace Library, İstanbul Archaeological Museum Library, Şifahane
Introduction:

Access to knowledge is a critical issue for the people of the 21st century. It is not only about the daily necessities, but we also want to know and understand our history of culture, science, literature, art, etc. as human beings. Libraries are the most important sources to satisfy this curiosity. Classical library systems are not adequate for today’s needs. More people want to access books, magazines, maps, and other library objects. On the other hand, we know that all the library materials are living organisms and like other living beings, they have a life span. If preventive conservation is neglected, the life span of these objects will be significantly reduced. When the manuscripts are handled, especially unique ones, the issue becomes more complicated, as they are rare, valuable, and brittle. More people want to access these valuable manuscripts, but librarians have to ensure they follow universal preventative conservation principles. Most of the objects in the manuscript libraries are given to readers only with special permissions. Readers or researchers require an appointment from libraries to examine the manuscripts, and they have to do their research in the time that is determined by library authorities. This is not a sustainable system for manuscript libraries, and it is not sufficient for researchers. Consequently, digital technology can provide opportunities to address these problems.

Digitisation of Library Materials

The digitisation of library materials is a relatively new phenomenon for librarians and institutions and, therefore, there are some challenges that are not fully understood. The lifespan of the digital format is not fully understood; how it will survive within 10, 20 or 50 years periods. Despite this, however, digitisation is the best way to provide maximum access to books with minimum impact on them.

Project

In 2014, a cooperation protocol was signed between the two governmental organization affiliated with the Republic of Turkey’s Ministry of Culture and Tourism; Manuscripts Institution of Turkey and the General Directorate for Cultural Assets and Museums for a digitisation project of the manuscripts at the libraries of Topkapı Palace Museum, İstanbul Archaeology Museums, Museum of Turkish and Islamic Art, Haghia Sophia Museum, and Museum of the Tombs.

The Department of Manuscript Conservation and Archive (Kitap Şifahanesi), one of the departments of the Manuscripts Institution of Turkey, is leading the project. All researching, planning, and training steps have been undertaken by Şifahane (an abbreviation of Kitap Şifahanesi ve Arşiv Dairesi Başkanlığı (Department of Manuscripts Conservation and Archive) directly translated “ Kitap Şifahanesi” is “book hospital”).

Importance of the Project

- Topkapı Palace Museum Library Collection

Topkapı Palace (Figure 1), which was turned into a museum in 1924, had been used as the primary royal residence for 400 years (1465-1856) during the Ottoman Empire.
The most valuable manuscripts were collected in Palace for centuries; many were either gifts to or bought by the Sultans. The valuable manuscripts had been brought to the Palace and the important artists, writers, scientists, poets, and scholars of that period had been made residents of the Palace. The Palace had a Naqqash-hane (palace painters’ working area) and some of the manuscripts, illustrations and miniatures were created here. The Agalar Mosque in the third courtyard of the Palace became a library in 1928, and all the collections that had been stored in various parts of the palace were gathered in this new library area. There are 13 collections that have an internal classification; all the books are classified into their subject and content as in the Ottoman Librarian system. Topkapı Palace Museum Library (New Library) has 21,438 items; 18,622 of them are manuscripts and 600 of them have miniature illustrations. The earliest ones, which are dated to the 8th-9th century, are the Mushaf (Qur’an pages) parchments that have been written in the Kufic style. Most of the manuscripts in the Palace Library are unique; not only in terms of the historical and contextual importance but also in terms of the Islamic Book Arts.

- İstanbul Archaeology Museums Library Collection

The library of İstanbul Archaeological Museums (Figure 2) has up to 60 000 books and 1958 of them are historical manuscripts. Most of the manuscripts are written in Ottoman Turkish while the others are in Arabic and Persian. The library collection has been enriched by the donations of various important scholars and their families, and institutions, libraries, and governmental organizations from all over the world. Archaeological books, journals, and magazines have been collected since the library’s foundation. The Osman Hamdi Bey Collection is a major part of the library. Osman
Hamdi Bey, who lived at the end of the imperial age (1842-1910), is one of the famous painters, archaeologists, and art experts of his age, and founder of the İstanbul Archaeology Museum.

Other Museum Libraries

Also intended to be included in the project are the collections of the libraries of the Museum of Turkish and Islamic Art, Haghi Sophia Museum, and Museum of the Tombs.

The project began in the Topkapı Palace Library Museum on the 2nd March 2015 and in the İstanbul Archaeology Museums Library on the 13th April 2015, where there are two line scanners for each library and 5 digitization operators.

Planning

The planning stage is essential for digitisation projects. There are some important points that were considered;

- **Evaluation of the suitability of manuscripts for digitization**

  Every piece of the collection is investigated by the conservation specialists in terms of physical, chemical and biological degradations. If the deteriorations are too severe, these books are not digitized until the application of active conservation treatments. The books that cannot be handled because of the acidity, iron-gall ink corrosion, insect damages, and fragile book-bindings are noted, and these books are digitized after restoration. At this stage, the collaboration with the library authorities and the digitization department is
very important. In this project, the assessment of the condition of the manuscripts is under the responsibility of the individual libraries, as they have the necessary knowledge about the specific condition of the books under their care.

- **Choosing the convenient digitization instrument**

High-quality digitisation equipment (scanners) are essential, ideally those which have up to 600 ppi resolution. Considering the specific needs of the collection is vital at this stage. For instance, 300-400 ppi resolution is sufficient for the printed rare books and manuscripts. The digitisation of manuscripts that have miniatures, illuminations, and other book arts in 400-600 ppi provides a better result. Moreover, choosing the appropriate scanner size is important. For example, if a map collection is digitized, A1 type scanners should be chosen. However, for ordinary sized books, A2 or A3 type scanners are sufficient.

- **Training the Staff**

It is important to make staff aware of the value of manuscripts and rare books and explain why digitization is important for preserving society’s knowledge. The training undertaken included explanations of the technical details of the scanners, preventative conservation and handling issues.

- **Data collection**

Hard-disks with 2TB storage capacity were temporarily provided for storing images. A database, which included entries such as the number of digitized books and number of images, has been prepared for recording daily working outputs.

**Method**

In this project, the text blocks of the manuscripts are digitized at 400 ppi resolution except the ones which include miniatures, illuminations, and special book arts which are digitized in 600 ppi, as are book-bindings, covers, maps, and painted pages.

For this project A2 type line scanners which have a maximum resolution of 600 ppi, color scanning at a speed of 3.5 seconds / 300 ppi, 4.0 seconds / 400 ppi, and 6.0 seconds / 600 ppi are used. The images are recorded and stored in TIFF, JPEG, and PDF formats. PDF is optional for requests of museum library authorities. Images are shared with readers in JPEG formats. All the images are stored as two copies. One of these copies is in TIFF format, another is JPEG, at the relevant libraries and Şifahane. This means, for one image; two formats are provided, and all formats have two copies.

Best practice is vital, and there are strict guidelines on the conservation and handling of the manuscripts adhered to during the project:

- Hands are washed and dried before starting work.
- Using gloves is not recommended because the tissue of gloves is not smooth like hand tissue and causes damage to the edge of the pages. However, if there
is suspicion about microorganisms or molds infestation on the pages, cotton gloves are used to avoid possible infections.

- The book is adjusted and placed into cradles in an appropriate way (Figure 3). The valuable books, in particular, are not opened at a 180° angle.
- Book supports are used and the pages are scanned one by one.
- The room in which the scanners operate is protected from day-light with dark blinds. This is important both to avoid the reflection onto pages and to adjust the white-beam configuration of scanners.
- Black cardboard is placed under the scanned book to prevent reflections.
- Snake weights are used to hold the book with minimal stress.

![Figure 3: Scanning of a rare manuscript (Photographed by Leyla Ağluç)](image)

**Results and Discussions**

In a 6 month period, about 600 manuscripts were digitized, controlled, copied and stored in the Topkapı Palace Library, whilst, about 400 manuscripts were digitized, controlled, copied and stored in the Archaeology Museum Library over a 4.5 months period. The Archaeology Library part of the project was started one month later than the Palace Library as a result of the creation of space for the scanners.

As illustrated in Graph 1, the rate of digitisation increased with time. The main reason for this is the increasing experience of staff in the process of the digitization.
Two digitization operators have been working in each library, with coordinator has been assessing each image from the four line scanners. The images are stored on external 2 TB hard disks in the first stage. One copy of the disk is stored on Şifahane servers for sharing with the Süleymaniye Library Reading Rooms. Another copy is been given to the library. All stages of the project are followed by an evaluation from one of the manuscript specialists of Şifahane. Given the multiple partners involved, good communication between the organizations is very important for collaboration, processing and evaluation of the project.
Conclusion

Digitisation of library documents is an important issue for libraries. In Turkey, the history of reformatting the library materials began with microfilm and photography. With modern improvements to imaging technology and the increasing importance of digital accessibility, digitisation with line scanners has become an important part of reformatting.

Turkish libraries have many important manuscript collections, and there are many scholars and researchers who want to access digital copies of these documents instead of working with the real pages in library reading rooms. The digitisation of manuscripts is crucial for providing access to the collections. This project has contributed to the preservation by decreasing the direct use of those valuable manuscripts.

This is the start of a new chapter for Turkey’s museums and libraries and it will be a long process given that the digitisation of manuscripts is a delicate job, and there are thousands of manuscripts waiting to be digitized. Following evaluation after the first five months, the project is likely to last at least 15 years. We plan to decrease this by increasing the number of line scanners and operators. Furthermore, it aims to microfilm all the images that are digitized in the future.

In this article, we have shared our experience of the preparation and ongoing delivery stage and the first outcomes of this project. It is hoped that the article and our experience was informative and instructive for the professionals working on librarianship, museology, and showcases the importance of the digitisation of historical documents, rare books, and manuscripts for user access and institutional strategies.

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Nurgül Akcebe graduated from the Chemistry Department of the Middle East Technical University and holds an M.S. degree in Organic Chemistry from the Istanbul Technical University. She is working in the Department of Manuscript Conservation and Archives, as Assistant Manuscript Specialist. Nil Baydar holds BA degrees from the Art History and Conservation and Restoration of Movable Cultural Assets departments of İstanbul University. She worked in the Gelsenkirchen Restoration Institute on paper and leather conservation and restoration. She is the Deputy Head of Department of Manuscript Conservation and Archives.
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