The Changing Landscape:
Preserving Mexican Digital Documentary Heritage

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ABSTRACT

This paper provides insights into the *Biblioteca Nacional de Mexico* (National Library of Mexico)'s efforts to ensure proper stewardship over its digitized and born-digital cultural collections. Since its establishment in 1867, the National Library of Mexico has collected unique and invaluable collections that are at the heart of Mexico's Documentary Heritage. It became the national Legal Deposit library in 1957, giving it the responsibility to create and care for the country's documentary heritage. The Legal Deposit Decree was amended in 1991 in order to include electronic documents. Two main digital platforms were created to provide greater access to its collections: the Digital National Newspaper Library and the Digital National Library. This paper outlines the challenges the National Library of Mexico faces in order to preserve and provide long-term access to its digital cultural collections and strategies that have been implemented so far. It shows how these impact on old rooted practices and how the library is planning to move forward in establishing sustainable approaches to guarantee the digital preservation of Mexico's documentary heritage.

CONFERENCE THEMES

Collaboration and capacity-building. Mapping out sustainable digital preservation approaches and communities.

KEYWORDS

Digital preservation, digital documentary heritage, Mexico, Legal Deposit, National Library of Mexico, electronic resources, preservation management.

1   INTRODUCTION

The *Biblioteca Nacional de México* (National Library of Mexico) is one of the main organizations charged with collecting, cataloguing, preserving and providing long-term access to Mexican documentary heritage. The National Library of Mexico, also known by its acronym BNM, was founded in 1867 and opened its doors to the public in 1884; it holds unique historical and contemporary archival, bibliographic and newspaper collections that give an account of the history of Mexico since XV century (Brito, 2017).[1]

BNM's collections continue to grow, as in 1957 it became entrusted with the Legal Deposit of books and publications. The Legal Deposit Decree was amended in 1991 in order to include electronic documents (1991); since then, the BNM has collected diskettes, audio and videotapes, optical media, and other digital materials. In recent times, the BNM has seen the scope of its collections greatly increased with the arrival of digital and online materials. In addition to these born-digital documents, the BNM has ongoing digitization projects aimed at preserving and increasing the access into its analogue historical collections such as microfilms, slides, videotapes and a great variety of paper-based documents.

As a result, BNM´s digital collections are complex and heterogeneous. Their access and preservation demand the consideration of several issues, such as variety of formats and media, as well as the diversity and obsolesce of playback equipment, software and hardware. In addition to this, BNM faces extraordinary challenges involving the human and technological infrastructure, the lack of procedures, standards, workflows and policies with regard to digital preservation.

This paper briefly describes some current challenges, as well as ongoing initiatives that the BNM is promoting as a means to implement best practices for the creation, digital preservation and long-term access of its digital collections.

2   THE DIGITAL TURN

2.1 The National Library of Mexico

The BNM's administration and governance make it a complex institution. It was originally administered directly by the Education Ministry but in 1929 it was decided to give custody of the Library to the *Universidad Nacional Autónoma de México* (hereafter referred as UNAM). Later, in 1944, the *Hemeroteca Nacional de México* - the National Newspaper Library (HNM) - was founded. Since 1967 both institutions, BNM and HNM, are administered by the UNAM´s research institute of bibliographic studies, *Instituto de Investigaciones Bibliográficas* (IIB-UNAM) (Castro, 2017 and Galina, 2018). [2] For the BNM, being a federal institution but administrated by the UNAM implies particular organizational, legal and financial issues. Additionally, BNM must meet the mandates of both the government and the university.

On one hand, as a federal institution it has been entrusted with the Legal Deposit since 1957; [3] in 1991 the Legal Deposit Decree was modified in order to include non-printed material. Therefore, in order to fulfil its responsibility as a depositary institution, the Library has been receiving a copy of microfilms, slides, magnetic media, diskettes, floppies, optical media and other audiovisual and electronic materials that contain information similar to their printed counterparts (1991). In order to better address the challenges of organizing, cataloguing, and providing access to computer-readable documents, the BNM created the "Electronic Resources"

area. Recently, this department has started dealing with the challenges of capturing online digital resources and receiving born-digital books, periodicals and newspapers (Galina, 2018).

On the other hand, as part of UNAM, the BNM was included in the program "UNAM entirely Online" which aimed at providing access in to the University´s digital collections. Since its establishment in 2011, "UNAM entirely Online" focuses on reaching an institutional culture for *Open Access* both in research and teaching (Amador, 2011).

Within the framework of this program, the BNM launched the National Digital Newspaper Library – also known as HNDM (*Hemeroteca Nacional Digital de México*). HNDM made available "more than nine million images corresponding to 947 titles of historical Mexican periodicals and newspapers from 1722 until the beginning of XX century" (Amador, 2011). This collection of digital images began in 2002, when the microfilm collection started to be digitized due to a project aimed at ensuring access to and preservation of historical newspapers (Galina, 2017).

Later, in 2014, UNAM financed the technical infrastructure to build the digital repository known as the National Digital Library (hereafter referred as BNDM (*Biblioteca Nacional Digital de México)*). The BNDM holds around 5,500 titles; these are digitized books and manuscripts from historical bibliographic collections.[4]

Both digital platforms, the HNDM and the BNDM, were created under the umbrella of *access*. Although they are -most of the time- described as *preservation repositories,* in fact, digital objects nor systems meet the requirements for digital preservation. That is to say, these platforms do not have the means to deploy digital preservation best practices nor to apply basic activities such as audits or file integrity checking. In addition to this, the vast majority of digital images were created through mass digitization processes performed by outsourced services, lacking clear digital preservation standards and guidelines.

Given its role as a depositary institution and due to its mission to provide access to its unique documentary heritage, the BNM keeps on forming mixed and growing digital collections ranging from early analogue media, born-digital documents to digitized paper-based materials. According to recent reports, around 8,000 objects are added to BNM´s digital platforms every year (Mora, 2017 and 2018)**.**

2.2 Digital Oblivion

The BNM, as well as other major memory institutions in Mexico like the National Archives of Mexico,[5] face many challenges in managing, preserving, providing long-term access to, and ensuring the integrity of digital collections. As described above, there are at least three collections where digital objects are at great risk: early electronic documents, images from digitization projects, and online digital materials.

At the moment there are two main *custodians* of these collections: the librarians of electronic records and the IT department. Both areas have been trying to implement activities aimed at ensuring the accessibility of digital collections over time. However, they have not received particular training in digital preservation. Current efforts include refreshing and transferring contents from obsolete storage devices into new platforms, copying data, backing up information, and migrating databases. Despite these efforts it has become increasingly difficult to guarantee integrity, functionality, authenticity and readability of digital collections.

Some storage devices are already becoming unreadable and obsolete, thus making it impossible to have access to their contents.

As time passes by, the volume of digital objects will increase, making it impossible to respond to the challenges of preserving these media. In addition to the growing size and scope of collections, both areas lack sufficient infrastructure, skilled staff, as well as the technical expertise and means to access to the required hardware and software needed to read early electronic records. Furthermore, the BNM faces a major issue with preserving its digital collections due to the absence of policies, standards, best practices and procedures for digital preservation.

3 SUSTAINABLE DIGITAL COLLECTIONS

Storage is not preservation
Jon Ippolito

3.1 *Coordinación de Innovación y Estrategia Digital* (CIED)

In 2016 the *Coordinación de Innovación y Estrategia Digital* (CIED) was created, a digital scholarship department designed to research and implement theoretical and practical frameworks related to documentary digital heritage. My role within CIED consists in formulating strategies to address the urgent need for creating sustainable approaches for the creation, management and digital preservation of digital collections.

In 2018, I collaborated on the development of the digitization project for *Manuscritos.* Based on digital preservation approaches and roughly inspired by the OAIS model, the digitization project takes into consideration –for the first time- issues about ingest, administration, archiving, preservation and long-term access of digital objects (Rodríguez, 2016). It proposes guidelines in terms of file formats, metadata and packaging:

Preservation format	Access formats	Metadata ingest	Packaging	Transfer Tool	Integrity checking Tool
TIFF	JPG / PDF	FITS and EXFIT	BagIt	Exactly	Fixity

We are currently working on defining the core characteristics of the three main information packages, as well as experimenting with small open source tools that can be integrated into large and scalable systems. In the future, we would like to explore the implementation of software for preservation-oriented workflows and we are currently evaluating the use of Archivematica/Fedora and Archidora/Islandora/Fedora.

3.2 Communities of Practice

As BNM´s digital collections are at great risk, it is mandatory to implement digital preservation plans. As the expert Kara Van Malssen said: digital preservation is "technology, people and policies" (Van Malssen, 2012). As we move forward with researching tools and improving technologies at BNM we have faced more pressing issues regarding the lack of expertise and people´s resistance in changing old, embedded practices. It is still essential that the library begins implementing the necessary internal changes in procedures, human resources and technical infrastructure to address the pending issue of digital preservation.

Clearly, interinstitutional and interdisciplinary expertise is required, and for us building communities of practice is essential. As a result, in 2017 the *Grupo de Preservación Digital* was created.[6] The group brings together around 30 leading scholars, researchers, practitioners, and technicians from several cultural institutions. This transdisciplinary and multi-institutional initiative aims at enhancing research into the preservation of and long-term access to digital heritage. Its objectives are stimulating collaborative and interdisciplinary research, as well as widening the knowledge and understanding of the urgent digital preservation plans that must be implemented across the participating memory organizations.

4   CONCLUSIONS

Understanding digital preservation as a field of collaboration, capacity building and constant decision-making activities is a priority. It is necessary to increase awareness of the need to cooperate and work collectively on addressing digital preservation requirements within Mexico City-based cultural heritage institutions. BNM must work together with other custodians of documentary heritage to develop strategic policy frameworks, as well as preservation principles, strategies and workflows that meet the needs of new hybrid and complex collections.

Concerns related to digital archiving, digital preservation, long term access, and new competences, skills, workflows, human and technical infrastructure within the BNM have just recently begun to be addressed. Well-defined projects that contribute towards establishing the desirable administrative, technical and legal infrastructure that will facilitate sustainable approach to long-term digital preservation have not yet been established. It is the aim of our office, with the support from the *Grupo de Preservación Digital*, to turn this situation around.

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NOTES

[1] For more information about the Biblioteca Nacional de México see http:/bnm.unam.mx/

[2] Although officially BNM and HNM are two institutions, they are closely linked and so for the purpose of this paper we shall use BNM to refer to both.

[3] The BNM together with Mexico's Library of Congress (Biblioteca del Congreso de la Unión), are currently the two institutions that are responsible for receiving legal deposit of the material published in Mexico.

[4] BDNM http://catalogo.iib.unam.mx/F/-/?func=login&local_base=BNDM and HDMN http://www.hndm.unam.mx/index.php/es/

[5] National Archives of Mexico (Archivo General de la Nación, also known by its acronym AGN). the AGN is responsible of preserving and providing access to these historical collections, as well as serving as the main repository for the records produced by the modern government.

[6] Grupo de preservación digital, more information at http://preservaciondigital.org.mx/