



Digitization of Broadcasting Materials and its Necessity

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ABSTRACT

Recognizing that today's broadcast is tomorrow's archive, an increasing number of broadcasters and organisations are considering the digitization of their media archives. Implementing digital media libraries so as to ensure the proper preservation has been recognised as a priority. In establishing a meaningful hierarchy of transfer projects it is necessary to take into account the nature of the document (unique or replicated), the threat of carrier degradation, and the threats of obsolescence. Digital conversion of library materials has advanced rapidly in the past few years. It promises to continue to expand its reach and improve its capabilities with extraordinary speed. Digitization has proven to be possible for nearly every format and medium presently held by libraries, from maps to manuscripts, and moving images to musical recordings. In this paper an attempt has been made to address the challenge of preserving our audio heritage.

Keywords : Digitization, Broadcasting, Audio material.

Introduction

Audio visual documents have been called the media of the modernity; no adequate understanding of the past 100 years would ever be possible without them. Among all the media employed to record human creativity, sound recordings have undergone particularly radical changes in the last 25 years. The "digital revolution" has introduced new audio formats to consumers and library collections. Institutional archives are now making a transition from preserving audio collections on tape reels to creating digital files. Libraries and archives face both opportunities and challenges. While libraries develop ways to maintain and serve their digital collections, they still face challenges in maintaining audio collections in older formats. Analog discs and tapes continue to require attention and pose particular challenges. For historical audio recordings to be accessible to researchers in the future, specialised equipment must be maintained for playback. Many of these analog recordings are deteriorating and must be reformatted while they are still playable.

Changing technologies for preservation of recorded sound: A Challenge

The recording and playback of sound began with Thomas Edison's invention of the phonograph in 1877. Thus, 10 years after the arrival of Edison's phonograph, Emile Berliner patented his disc gramophone. And within a few decades, Edison's cylinder recordings were largely replaced by Berliner's more-convenient flat audio discs, recorded at approximately 78 revolutions per minute (rpm) and usually composed of hard but brittle shellac. Following World War-II, the shellac 78 gave way to the almost-simultaneous introduction of the flexible vinyl 45-rpm single and 33-1/3-rpm long-playing (LP) record in 1948-1949 and to magnetic recording tape. Magnetic tape, developed in Germany and brought to the United States after World War-II, came into widespread use in commercial recording sessions by the late 1940s.

By the mid-1960s, when record companies began to offer for sale prerecorded, continuous-loop, eight-track tapes, consumers began participating in the audio tape revolution in earnest. The next major breakthrough in consumer playback came with the arrival of the first widely available digital carrier, the compact disc (CD), which was introduced in 1982. As digital audio has gained precedence, new digital carriers – digital versatile discs (DVDs) and MP3 players, among others are

already jostling the CD for preeminence.

Digitization in broadcasting sound archives: Selection Criteria

The importance of preserving and ensuring access to the nation's audio heritage is now widely recognised, and many in the public and private sectors have called for a coordinated national effort to address the preservation challenge. There is nothing left of broadcasting unless it is recorded, collected and preserved, an operation that would be sterile unless there are also mechanisms for access to the preserved content.

- i) Considerations and constraints: Many broadcasting organisations are embarking on projects to digitize parts or all of their audio collections.
- ii) Cultural, scientific or academic significance of content: Most radio archives hold material that represents historical, social, political and cultural aspects of life in their region and locality. Priority should be given to digitizing holdings which are unique to their organisation.
- iii) Primary institutional responsibilities: Apart from a broader national role most broadcasting organisation need access to archive material for re-use in transmission and increasingly for re-use and re-purposing in other digital projects. Some material receives more frequent uses while other parts of a collection remain dormant. The evidence in Hand (2001) reasons for digitizing each of these categories can be considered once materials are divided into four groups such as :
 - a) Materials that are not rare and that are frequently used
 - b) Materials that are not rare and that are frequently used
 - c) Materials that are rare and are frequently used
 - d) Materials that are rare and infrequently used

Technical considerations

Many broadcast archives have stock on carriers now degrading and unstable.

- i) Original versus replicated carriers: Originals of all kinds of carriers have higher priority than replicated items. While

originals are irreplaceable, there is always a chance that other, even better preserved copies are held by collections elsewhere. The chances may be low for antique replicated cylinders, but very high for recent LPs and CDs. It is recommended that every effort is made to find the best copies available.

- ii) Degradation of carriers and its assessment: The most important, and the most difficult assessment is to determine the state of deterioration of a given carrier, or group of carriers in order to arrange for a timely transfer. It should be stated that such risk assessment requires a high degree of expertise.
- a) Cylinders: Cylinder is extremely fragile; cylinders should always be of top priority in digitization programme.
- b) Coarse grooved discs (78-rpm records) : Most widely used variety is "lacquer" disc. Mainly due to high levels of humidity and temperature these lacquer coatings shrink and became brittle with age until they crackle without significant previous warning. Therefore, all lacquer discs should be transferred without delay.
- c) Micro-groove discs ("vinyls" LPs) : Replicated micro-groove discs consist of a PVC/ PVA (Polyvinyl chloride – polyvinyl acetate) co-polymer. Generally, they be proved stable so far. The great majority of vinyl discs can be raked at the lower end of the priority list.
- d) Magnetic tape: Magnetic tape mainly consists of two layers, the base film and magnetic layer which carry the information. The greatest problem with the magnetic tape is the material which binds the magnetic pigments to the substrata. In the course of the replay process these pigment particles are deposited on tapes guides and replay heads swiftly impairing the quality of replayed signal. This phenomenon called "sticky tape/ sticky shed syndrome".
- e) Optical carriers: Deterioration in the protective layer can result from mechanical scratches the use of inappropriate, "bleeding" dyes for the label information, and by chemical degradation due to ageing or improper storage. The migration of adhesives from labels traditionally used in libraries to identify the object and its owner can have destructive efforts. For all these reasons, specifically older parts of CD stocks, and all labeled CDs must be considered at risk.
- iii) Obsolescence of replay equipment and associated software: All audio carriers are machine readable documents.

A meaningful strategy in the ranking of digitization has also to take the availability of replay equipment into account.

- a) Formats already obsolete: All mechanicals formats are obsolete. Another group of obsolete audio formats are early digital audio formats employing analogue video formats as target carriers. The most prominent of these are Sony PCM F1 (701, 601 and 501) using Betamax recorders, and Sony PCM 1600/10/30, using U-matic recorders. Betamax was widely used by smaller recording studios and U-matic was the standard for CD-mastering.
- b) Formats about to become obsolete: The quarter inch analogue magnetic tape format is currently about to become obsolete through the progressive withdrawal of manufacturers from the production of new equipment.
- c) Other formats: R-Dat has been widely utilised in the smaller studios and radio stations. It has also been widely used as a digital target format in digitization projects of endangered analogue carriers. R-Dat has recently lost its predominant position.

In establishing a meaningful hierarchy of transfer projects it is necessary to take into account the nature of the document (unique or replicated), the threat of carrier degradation, and the threats of obsolescence. It will often be very difficult to make a proper quantitative assessment while properly balancing degradation against obsolescence. Because of new experiences and results of research related to carrier degradation on the one hand, and the development of the market which determines obsolescence on the other, sound archives need to be on constant alert and prepared to adapt their strategy to new situations as they arise.

Conclusion

Digital technologies use for the enhancement of access and preservation of analog library materials provides an immediate example of the active role that digital technology has taken and will continue to take in preservation. Many librarians might say digitization is preservation and needs to be done for collection to remain viable – we're preserving something from deteriorating. Smith (1999) sums it up best when she says though digitization is sometimes loosely referred to as preservation, it is clear that, so far, digital resources are at their best when facilitating access to information and weakest when assigned the traditional library responsibility of preservation. Archiving digital content requires an ongoing technological strategy to ensure access to stored collections over time. A technological strategy for digital content is increasingly important as more content is created digitally (born digital).

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