

8. What to do with audiovisual carriers after their digitization? Proposal for a five-step decision-making framework

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Both traditional and more recent audiovisual carriers degrade. Even CD-ROMs have typically only a ten-year expected life span. In addition, playback equipment for both analogue and digital carriers will ultimately grow scarcer and more expensive to repair or replace. Archives and museums are inevitably faced with the decision of whether to preserve audiovisual carriers after their content has been digitized. This paper offers a draft decision-making framework developed by the Flemish Institute of Archiving (VIAA). Assuming that an institution already has a digital collection management system in place, the proposed framework addresses the concepts of favourability, possibility, value, preservation conditions and the risk for other carriers through a series of questions. The paper also addresses the disposal of carriers, should an organization decide that disposal is in the best interests of its collections.

have to invest in the preservation of audiovisual carriers? Will there even be players available? Some machines and parts are already scarce. In other words: now is the time to digitize analogue audiovisual carriers. But what happens then?

The above is of course a very provocative statement, but as ever more audiovisual collections get digitized, the question arises, what to do with the original carriers after the migration to file-based formats has been completed. Classic audiovisual archiving theory, in this case IASA-TC03, says we should keep them “whenever possible” (IASA Technical Committee, 2005). But what if storage is an issue? Will we keep them – and if so, for how long – or can we discard them? But how, and under which circumstances? Undoubtedly there is no simple answer, so we may have to formulate some nuanced advice, with many arguments to base a decision upon. We will have to investigate and provide good practices, develop solid guidelines and even create instruments that can really serve in practice, such as a decision framework.

The current large-scale digitization projects organized by the Flemish Institute for Archiving (VIAA) are an occasion to contemplate the issue of preserving or disposing of audiovisual carriers after their digitization. These projects involve almost a hundred Flemish broadcasters, libraries, archives and museums that manage audiovisual heritage collections. Several of them have already raised the question about what to do with the carriers after digitization. VIAA, together with PACKED vzw (the Flemish Centre of Expertise in Digital Heritage) and FARO (the Flemish Interface Centre for Cultural Heritage), wants to help its content partners by providing them with a solid framework on this issue. Without pretending to be a standard, VIAA's content partners can use this framework to formulate a well-advised decision on whether to keep or dispose of audiovisual carriers after digitization.

If experts predict that most magnetic tapes will no longer be readable after 2030, how much do archives and museums still

Although other concerns than the ones outlined here might arise, our aim in sharing our guidelines is to inspire others

to answer difficult questions about discarding carriers and to evolve practices. To come to our own reasons, we have organized several discussions, not only with our content partners but also online and at two international conferences on audiovisual archiving: SOIMA in Brussels (3–4 September 2015) and the Fédération Internationale des Archives de Télévision / International Federation of Television Archives (FIAT/IFTA) World Conference in Vienna (7–10 October 2015). We also studied some recent publications, in particular Memoriav (2016), Pellizzari (2015) and Mäusli, Herold and Looser (2014), as well as a presentation by Arnoud Goos (2015). We also took a look at guidelines from the museum world, i.e. the Dutch guidelines for the discarding of museum objects (LAMO; see Bergevoet, Kok and de Wit, 2006).¹

This first draft of the decision framework as developed within VIAA is one that could be followed by our content partners. It is based on a series of questions and represents evolving perspectives and considerations about determining value for audiovisual carriers. May the arguments mentioned in this article encourage heritage institutions to take an open-minded approach to this delicate issue. May the arguments not mentioned serve as an encouragement to elaborate further on it.

Preamble to a decision framework

Prior even to the question if one would like to discard (one way or another), there should be a solid *digital collection management* system for sustainable preservation of the digital copy. This means that the collection manager should be certain that the collection or the item is decently digitized by performing thorough quality control. Also, trustworthy storage and preservation measures to ensure access to the resulting digital files in the long term should be put in place.

Although ‘certain’ and ‘trustworthy’ are somewhat relative concepts here, as we never know what the future will bring, we would like to believe that VIAA does a good job in guaranteeing these conditions and that the content partners count on VIAA to qualitatively digitize and sustainably store their digital files. How a sustainable digital copy is made and how it should be managed and preserved are not within the scope of this article. Many publications that address these

issues can be accessed, for example, through knowledge banks such as PrestoCentre.²

A five-step decision-making framework

Assuming reliable digital collection management practices are in place, VIAA considered it its task to guide the content partners through the decision process of discarding carriers after digitization, in case – and this is important – there is a need to do this. VIAA defined a five-step decision framework. Each step contains key questions that can help the content partner to make a well-considered decision.

Step 1: Is disposal favourable?

Disposing or discarding a (range of) carrier(s) is only favourable if it can enhance the collection and the functioning of the institution, and if there is sufficient capacity to carry out the disposal project properly. In order to provide good care of collections, well-trained and sufficient staff members are indispensable. Unfortunately, with funding in the cultural heritage sector under a constant threat, this cannot always be guaranteed.

Heritage-managing institutions should carefully consider the need and the available capacity for the disposal of carriers. They should ask themselves the following questions:

- *Will the disposal effectively improve the collection?*
The disposal of (a range of) carriers will make more storage room available for other carriers; thus the remaining collection can be stored more properly and in a better organized fashion. It will also give staff more time to spend on more urgent collection matters. The funds that were used for the preservation of the discarded carriers can be relocated to invest in new collection items or better conservation conditions for the remaining collection items. In case of disposal by sale, funds will be gathered that can be used to improve the collection or storage conditions for the remaining collection parts.
- *Is there capacity to carry out a discarding project?*
Discarding carriers should be understood and handled as a project. To carry out a project, one needs funds, staff and time. The project should be well prepared and executed: sorting out the carriers that qualify as to-be-discarded, decently documenting each step in the process, carefully running through the decision framework, consulting a team of experts (preferably internal as well as external), exploring and preparing a manner of discarding and so on. Related to this, another important question is: does the management support the project?

¹ We want to thank the members of the Flemish and European (audiovisual) heritage community who have participated in these discussions: Jürgen Vanhoutte (FARO), Rony Vissers (PACKED), Willem Vanneste (Antwerp City Archives), Gaby Wijers (LIMA), Dr Theo Mäusli (SRG-SSR, Università della Svizzera Italiana), Yves Niederhäuser (Memoriav), Arnoud Goos (Netherlands Institute for Sound and Vision), Pio Pellizzari and Stefano Cavaglieri (Fonoteca Nazionale Svizzera) and all the participants in the discussion panels at VIAA itself and at the 2015 SOIMA conference in Brussels.

² See www.prestocentre.org/resources.

If the answer to the questions above is no, the discarding process should stop here. If the answer is yes, and enough capacity is guaranteed, the discarding process can continue to the next step.

Step 2: Is disposal possible?

In some cases, museums and archives do not own (the rights to) their collections but are merely keepers. As a consequence, they may not have the right to dispose of the collection items. Also, issues of copyright might be applicable, and not only when it concerns works of art. In the case of artworks the (heirs of the) artist should always be contacted when disposal is considered, because the intentions of the artist should be taken into account.

Heritage-managing institutions should carefully consider the rights and ethics that could forbid them to dispose of collection items – or obstruct them from doing so. It may be necessary to consult a legal expert. The questions below only touch the surface of the rights issue when it comes to discarding carriers. But institutions can start by asking themselves the following questions:

- *Are there property rights applicable to the item or collection? Were specific agreements made with the item's donor? Are they written down in a contract, and what do they say about discarding the item? Is the preserving institution even the owner of the item?*

Donors sometimes offer an interesting item to a museum or archive but specifically demand that the object will be displayed and will never leave the collection. If this is the case, the heritage-managing institution has two options: to stop the discarding process immediately or to contact the donor or his/her relatives to see if they want to change the conditions of the contract or if they want to take the item back. An item can also be deposited. In this case the preserving institution is not the owner and has no right to perform a disposal. If the item is a long-term loan that belongs to a private collection or another institution, arrangements can be made to send it back to the original owner.

- *Are there copyrights applicable on the item or collection, and did the maker of the carrier write down his/her demands concerning the item as an art object?*

It may be the case that an artist intended to use a specific type of carrier for the artwork. If so, one cannot choose to make a digital copy and get rid of the carrier because the carrier is an intrinsic part of the artwork. The same applies here: the creator or his/her heirs should be contacted to discuss the actions taken to preserve or discard the carrier. It is advisable to contact the legal department of the institution or a legal expert to sort this out.

If the answer to any of the above questions is yes, institutions should consider the mentioned options or stop the discarding process here. If none of these rights are applicable, they can continue to the next step.

Step 3: Is the carrier 'valuable'?

When dealing with audiovisual materials, it is in most cases the content that predominates the value of the physical carrier. Once the content is digitized and sustainably preserved, one could in those cases argue that the carrier is of minor importance. However, collection managers should ask themselves what exactly has been digitized. In most cases it is only the content and not the carrier, the related technology, the history or something as trivial as the scent (see the anecdote described by Seely Brown and Duguid, 2000, pp. 173–174) that was digitized. All of these other elements may be essential to fully understand the meaning of the item, and not only when talking about a work of art.

This brings up the question of the appraisal of the carrier as a physical item in itself: there are hundreds of analogue audio and video formats, some more fragile or rare than others. Is it an archive or museum's job to preserve these formats for the future? Or could it be enough to preserve one *specimen* of the physical carrier if one wants to understand the technological context of production, preservation, dispersion and demonstration of audiovisual carriers within a hundred years? And if we opt for the latter, can arrangements be made between (regional) archives and museums: who preserves what?

Cultural heritage institutions should carefully consider if the carrier they want to discard is valuable to their collection or unique in any way, and ask themselves the following questions:

- *Does the content or carrier have a significant value within the collection? Which place does the audiovisual collection or the carrier take within the entire collection: main or supporting collection?*

It is advisable to define the mission of the institution, if this is not already the case. The mission should determine what the institution represents, and thus what it collects – in other words, the identity of the institution. Depending on the mission, it can determine if the audiovisual collection is a main or a supporting collection. Generally, the supporting collection will be of minor value for an institution. For example, for a museum of contemporary art an audiovisual object can be of main importance (as an art object), while for a handicraft museum the audiovisual collection is more likely to serve a supporting purpose. The appraisal of any collection item is also linked to the collection management planning or profile of an archive or museum.

The word 'value' is not easily definable; the value of a carrier can be economical, cultural, historical, etc. Collection managers should check the collection management planning or profile to determine what sort of value an item holds within their collection.

- *Does the carrier have an important link with the content (or vice versa)?*

It could be that the creator of the content had a specific reason to make use of a certain carrier type. For example, an artist may have intended to use film, and not video, to create a specific effect in which the viewer also hears the rattling sound of the projector as part of the 'total experience'. The rattling of the projector is an intrinsic part of the artwork. If this is the case, one cannot make a digital copy and discard the original film because one would lose a part of the artwork. Collection managers should at least try to take into account the intentions of the creator.

- *Is the carrier format unique or rare when it comes to the technical characteristics?*

Also the carrier itself can have a certain value. Not only very old carrier types but also more recent but rarely used carriers can be interesting to illustrate audiovisual and technological history. The technical characteristics related to the carrier, as well as to the recording and playback process, can be interesting for future generations.

If the answer to at least one of the above questions is yes, one should reconsider the disposal and stop the process here. If not, the process can continue to the next step.

Step 4: Are preservation conditions suitable?

Audiovisual carriers demand special preservation conditions that archives and museums cannot always guarantee. A relatively cold and dry environment, free of dust and air pollution, is desired. The carriers will degrade quicker if these conditions are not fulfilled.

Not only very old and fragile audiovisual carriers (like wax cylinders) but also more recent carriers (like the CD) are subject to deterioration. What is certain is the fact that the carriers will only degrade more over the years and in the end it will even become impossible to play them due to this degradation. However, when exactly it will become impossible to play them is not clear in advance. This can only be determined by regular checks. Still, there is a good chance that old tapes can still be played, e.g. for re-digitization, if the right equipment and expertise is available. In this case one has to keep in mind that the costs might increase as the condition becomes even worse.

Heritage managing institutions should carefully consider if there is a real preservation issue for the carriers. They should ask themselves the following questions:

- *Are the storage conditions unsuitable for this carrier type?*

As mentioned, audiovisual carriers should be stored in relatively dry and cold conditions: an average of 20–30 percent relative humidity and 12–17 °C, even colder for film (we refer to other sources for more detailed information on climate specifications). However, this is a climate which might be not well tolerated by other archival or museum objects. A separate storage room for audiovisual carriers is desirable, but that is a huge investment for sometimes only a relatively small collection. Many institutions cannot guarantee these conditions, but carriers will degrade more quickly if these conditions are not met. Even if the carrier is still playable, will it still be in a few years if it remains in the same conditions?

- *Is there a pressing lack of space, or is there an actual problem that causes the removal of carriers from the storage?*

Very few archives or museums have storage room to spare. Luckily, in many archives or museums the further increase of analogue or carrier-based audiovisual collections will slow down and ultimately even end due to the change from analogue to digital or from carrier-based to file-based production. But since many heritage organizations do not store their audiovisual collection in separate, specialized storage rooms, the possibility exists that the space where audiovisual carriers are stored is required for other collections. The overall collection often grows faster than the available storage space in archives and museums.

If the answer to one of the above questions is yes, one can continue to the next step. If not, the process can stop here.

Step 5: Is the carrier at risk?

If carriers have been stored in unfit conditions for a long time, severe deterioration problems can occur. However, for some newer formats such as CDs, age alone can cause the carrier to become unreadable. For older formats, playback equipment can become scarce, and this is essential if the content predominates the carrier: if there is no more playback equipment available, keeping the carriers is useless.³

Institutions should carefully consider the state of the carrier and/or the available playback equipment. They should ask themselves the following questions:

³ One might hope for the emulation of extinct playback equipment, but history has proven this to be very rare and usually very expensive.

- *Is the carrier heavily contaminated with mould, vinegar syndrome or other degradation? Can this carrier affect or harm other carriers?*

Audiovisual carriers can get contaminated with mould due to humid storage conditions. Film can get affected by the vinegar syndrome. Both types of deterioration can rapidly affect other carriers stored in the same place.

Conservation or restoration actions, as well as isolating the affected items, can be very costly, so collection managers should always consider if the carrier and content is worth the investment.

- *Is the carrier obsolete, or is the content unreadable?*

An interesting example is the CD-R, which is a relatively recent format and still in use. In general, CD-Rs are expected to have an average life expectancy of ten years. As well as degradation of the dye, failure of a CD-R can be due to the reflective surface. While silver is more widely used, it is more prone to oxidation. Gold-based CD-Rs do not suffer from this problem, but they are more expensive and no longer widely available (IASA Technical Committee, 2014). VIAA just ended a CD-R digitization project in which 18 percent of the carriers proved unreadable, even by trying several kinds of data extraction.

- *Is the playback equipment (or spare parts for the equipment, or the expertise for repair) for this type of carrier rare or non-existent?*

Although cultural heritage institutions often do not own playback equipment for analogue carriers, there are often still players available that can be loaned, hired or bought. It is however important to note that even though for many playback technologies devices can still be found on the market, players as well as repair parts and the expertise to install them will become harder to find in the near future, which means that costs for (re)digitization will rise. Institutions that do not have the players at hand cannot consult the content, which makes it difficult to (re)use them in exhibitions, for researchers, etc. Providing a digital copy may solve this issue at least partly, thereby making the analogue carrier dispensable.

If the answer to at least one of the above questions is yes, one can decide to discard the carrier and move on to making a decision about the means of discarding. This is the end of the decision process.

The disposal itself

Once an institution has run through all the decision-making steps and has concluded that it will discard a (range of) carrier(s), it can start with the actual disposal. There are different kinds of disposal or deaccessioning. In any case, thorough research should be done, different

options should be considered and an interdisciplinary team of (internal and external) experts should be consulted.

- *Donation, transfer or exchange between cultural institutions*

This can be considered a good practice when, for example, a museum is looking for an audiovisual object for its technical characteristics, rather than for its content, and an archive has this specific item but it is no longer playable. If the archive is ready to dispose of the carrier, then a transfer to the museum (and the terms) can be negotiated.

- *Sale between cultural institutions*

This is not a good practice and is not recommended.

- *Sale to the public*

This is a difficult matter and can only be motivated when the profits are used to enhance the collection, either by improved preservation measures or by acquisitions. It is very important to communicate about this carefully and properly, in order not to harm the reputation of the institution, especially when it concerns the public good.

- *Degradation*

It can also be an option to 'degrade' a carrier from museum object to working or didactic collection. This option has several advantages:

- No cost for destruction.
- No negotiations with external parties needed.
- The object stays within the walls of the institution ('invisible' discarding).
- No more preservation costs.

However, not every institution has educational activities where audiovisual carriers can be used without specific relation to the content.

- *Elimination or destruction*

In the case of audiovisual carriers, this is the most preferred option. Magnetic carriers are considered chemical waste and should not just be thrown in the bin. They should be processed by specialized waste-processing companies. They usually provide containers and charge by the kilogram.

Conclusion

In this article we have discussed a decision-making framework that institutions managing audiovisual carriers could follow while deciding about discarding their carriers after digitization. Doing so, we have dealt with difficult questions that often have been circumnavigated cautiously in the past. We have tried to take a realistic approach, in the sense that we acknowledge that funding of cultural heritage

institutions is not guaranteed and that the degradation of physical objects and the disappearing of playback technologies is a given. The fact that we try to deal with these issues does not mean that we do not agree with the principle that the physical audiovisual carriers should be preserved. We have tried to formulate a solution for cases in which this principle has to be left behind.

From our work it is clear that this decision process is never quick or easy. 'Look before you leap' may sound like a cliché in this case, but it is the best advice we can give. To facilitate this consideration, we propose a five-step decision tree, based on particularly heavy but necessary concepts: favourability, possibility, value, preservation conditions and the risk for other carriers.

Several factors can make this five-step approach more effective. The first is to take a positive approach: disposal of collection items should always benefit the collection, the institution and even the local, regional, national or even global heritage. One should always start a disposal process with the goal of enhancing and improving the collection. Second, an interdisciplinary approach is always recommended. Disposal is not just a question of collection management. It is a legal issue, an ethical issue and even an environmental one. Third, the importance of documentation should not be neglected. If circumstances force us to leave a key principle of preservation – to actually keep the carriers – we should at least document these circumstances, as well as the decision process and the way we executed our actions of disposal, for our successors to understand. Somewhat related is the importance of communication. Discarding heritage is not something any stakeholder of a memory institution would expect them to do, but that does not make it less inevitable at some point. In order to keep its legitimacy, the institution must communicate the process in a transparent and open manner, before, during and after the disposal itself.

VIAA will pay sufficient attention to these returning aspects while advising its content partners. We will check and recheck our framework with experts in the field, and we will test our admittedly theoretical framework in practice. It is up to our content partners to decide whether they accept our reasoning and whether they find it usable in practice. As this discussion reflects historical and therefore evolving thinking about heritage *par excellence*, we hope that the discussion will continue to live, because we believe that what we keep is also defined by what we decide not to.

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