Metadata for Video Game Preservation - A Literature Review

**Introduction:**

The field of audio-visual preservation has established various approaches to metadata practices over time. With the emergence of new kinds of audiovisual formats, archivists have had to think through the best ways to describe and categorize beyond printed materials. While metadata for formats such as film, tape, and even digital video have been largely decided upon, there seems to be quite a way to go with another kind of audiovisual format – video games. This literature review aims to serve as a starting metadata guide for any archivist or collections manager who might already have video games in their collection or could have them come into their collection in the future. It begins by exploring existing standards for digital objects and digital media or art, highlights the work that has been done for video games specifically thus far, touches on these practices in relation to emulation, and even looks into metadata standards practiced in the video game industry.

1. **Metadata for Digital Objects, Digital Media/Art**
   1. To begin to think about video game metadata, it is useful to first think through current standards and practices for digital objects, and even further, digital media and art. For instance, the Online Computer Library Center (or OCLC), laid out a framework in 2002 for dealing with preservation metadata for digital objects.[[1]](#footnote-0) Although there have been significant changes in technology since the early 2000s, this framework is a solid foundation to start thinking through metadata practices for today’s wealth of digital objects, including video games. In their report, OCLC outlines the various elements necessary for each component of a digital object. For instance, there is a break down of metadata elements for the “Content Data Object” (the digital object being preserved) to the software and hardware for the object itself.[[2]](#footnote-1) This is an important step towards ensuring that the metadata for all objects is holistic and inclusive for whatever digital object or media is being preserved.   
      Similarly, the standards established by The Media Art Notation System (or MANS) accounts not just for descriptive metadata such as “creator,” “title,” and “date” but also includes terms such as “host” and “authorization,” which are essential for online digital objects.[[3]](#footnote-2) While these standards haven’t solved every challenge that video game and other modern audiovisual materials present, they serve as a strong and sensible foundation for anyone thinking through these challenges. Overall, they also serve as an example of how archivists and digital media stewards were thinking about preservation and description from the beginnings of trying to understand digital preservation.
2. **Current Video Game Metadata and Preservation Strategies**
   1. While the previously mentioned efforts to think through metadata strategies set a foundation for digital object preservation, we also need to look at the work that has already been done for video games specifically. That is, we need to examine the efforts that have been ongoing in the field that are specifically aimed at video game preservation. In 2015, scholars from the Information School at the University of Washington collaborated with the Seattle Interactive Media Museum to develop a schema specifically centered around video games.[[4]](#footnote-3) In their report, the students examine the problematic history of using Library and Information Science (LIS) standards as a catch-all for interactive media such as video games. They go on to explain that the complicated nature of a game, especially when it comes to the physical components of it, is one of the many aspects that LIS standards cannot account for.[[5]](#footnote-4) Eventually, they began their work by looking at the “six personas” or six variations of who might find video game metadata useful.[[6]](#footnote-5) Once this was done, the elements they ended up with included those that have been previously mentioned for born digital content but there were also some newer, more specific terms as well. For instance, their schema included “platform,” “series/franchise,” “rating,” and even “region.”[[7]](#footnote-6) Although these may seem like small additions to the field, they make a world of difference when it comes to games since all of these elements can affect the the gameplay (and therefore the meaning/interpretation) of the work. For instance, the term “region” can be especially important to know, given that video games often are edited or adjusted in some way for particular international regions.   
      In the same year, the first report from the Game Metadata and Citation Project (GAMECIP) -- an initiative done by the Institute of Museum and Library Services in collaboration with academic entities from US Santa Cruz and Stanford -- was released. This report included a much more extensive and detailed breakdown of various elements for video games. While the University of Washington report included new elements and definitions, the GAMECIP report took things a notch further by including detailed information such as comments, a URI for the element, and examples of the element in other schemas such as Dublin Core and MODS.[[8]](#footnote-7) This could be extremely useful for archivists looking to dive into a new schema, or even archivists who want to try and incorporate these elements into an existing set of standards their institution follows.   
      While it seems that GAMECIP hasn’t updated their standards since their initial report on their element set, the University of Washington and Seattle Interactive Media Museum have continued to collaborate together, with their latest report being released in 2017. In the latest report, the elements have grown substantially and now include even more specific elements such as “Difficulty Options,” “Representative Art,” “Packaging,” and even “Gameplay Video.”[[9]](#footnote-8) These updates are indicative of forward thinking when it comes to preserving games as an experience -- with elements such as the ones mentioned above, the authors are accounting for varying player experiences (from difficulty of a game to experiencing the gameplay through other means such as let’s play videos). On the whole, the work done so far in general allows for a robust starting point for any archivist or information professional to start thinking through their own preferences and needs for their respective collections.
3. **Challenges and Next Steps (Emulation)**
   1. While it’s important to account for the successes in the field so far, it’s also important to acknowledge the challenges being faced by those who have had to grapple with creating metadata schemas for video games. It’s equally important to think through what these new metadata schemas could mean for preservation efforts such as emulation, which seems to be an increasingly important strategy for archivists.   
      Some information scholars, including one of the authors of the 2017 University of Washington schema update, Jin Ha Lee, wrote about the challenges of creating such a schema in 2012. In their report on the matter, they pointed out a multitude of issues faced by archivists and information specialists. Namely, the vague nature of genre labels, restrictive or difficult to find information from the makers of the games, fuzzy boundaries for region and language, and difficulty distinguishing between the developer and the publisher of a game.[[10]](#footnote-9) These are all understandable challenges for any set of data, but especially for an interactive and frankly, complicated medium such as video games. As mentioned earlier, games can change depending on which region they were released in, and knowing the publisher and the developer of a game can help researcher better understand the game in general. Additionally, there were other issues such as inconsistent names and titles across countries.[[11]](#footnote-10)   
      These issues and challenges arising from trying to understand and organize video game data in a useful way are important to think about even though there are no concrete solutions to them at the moment.   
      In addition to these challenges, there is also the matter of making sure metadata can stay relevant even when materials are being exhibited using methods such as emulation. For instance, getting down to the technical specifics of certain pieces of information such as the versions of files associated with the emulation, would be more useful for both researchers and the archivists working with the emulation.[[12]](#footnote-11) These specificities are important to remember because they extend to hardware as well as other properties associated with the emulation and the files that are a part of it. Emulation itself has yet to be widely implemented in institutions but as it is an effective way to replicate a digital interactive experience, it’s crucial to try and understand how it affects the metadata of a collection. These challenges are part in parcel of working with interactive media in an archival capacity and therefore all the more important to try and understand as best we can.
4. **Professional Metadata Practices**
   1. Now that we have taken a look at metadata through an information sciences/archival perspective, the next logical step is examining what the video game industry itself is doing with said metadata. While in my research I wasn’t able to find any straightforward examples of their approach to metadata, it seems that at the very least, video game companies and developers touch on metadata through their documentation glossaries. Take, for example, the video game development platform Unity. In their documentation, there is a glossary that provides a list of essential terms related to their software such as “Aspect Ratio” and “Baked Lights.”[[13]](#footnote-12) These terms are organized in sections related to broader categories, such as “Graphics terms,” related to the different components and functions of their software.[[14]](#footnote-13) While this might not mirror exactly the metadata I have talked about thus far, it does provide some potentially useful insight for how developers think about metadata in their own practice.
5. **Conclusions**
   1. While video games are a relatively new media format that archives are starting to grapple with, in the coming years their presence will increase with new collections and acquisitions. Archives have always had to deal with new and ever changing formats making their way into collections, and one of the ways they’ve dealt with them has been through the handling of their metadata. By examining what we can do for the description of an interactive media format such as video games, we can begin preparing for their arrival in our collections. Additionally we can prepare for the future in a way by simply taking into consideration what has been done for digital objects in the past and by looking into what has been proposed so far for video game metadata practices, specifically. It is the author’s hope that this literature review, however brief, can at the very least provide some insight into metadata praxes for interactive media. This is by no means an all inclusive collection of sources on the subject and will need to be updated as standards (and video games!) change over time. However, these sources represent a jumping off point for archivists curious about video game metadata or even a potential foundation for archivists or other information professionals grappling with how to best handle the video games in their collections.

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