



InterPARES 2 Project

International Research on Permanent Authentic Records in Electronic Systems

Domain 1 Research Questions

Case Study 09(3): Digital Moving Images: Commercial Film Studio

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1.1. What types of documents are traditionally made or received and set aside (that is, created) in the course of artistic, scientific, and governmental activities that are expected to be delivered on-line? For what purposes? What types of electronic documents are currently being created to accomplish those same activities? Have the purposes for which these documents are created changed?

- Computer graphics animated film is the final product
- Artwork that is modified and merged throughout the production process until it becomes the final film product
- These entities are mostly Adobe Photoshop files and scanned TIFF files of physical artwork
- The purposes for which these entities are created has not changed

1.2. What are the nature and the characteristics of the traditional process of document creation in each activity? Have they been altered by the use of digital technology and, if yes, how?

- The traditional process of document creation occurs in various stages of the production process:
 - Visual development, character design, prop design
- Within these stages, analog records are generally created such as images drawn on paper with pens and pencils
- Digital technology has enabled these images to be scanned so that the images can be easily transferred to different individuals involved in the production process; these entities may be easily manipulated
- However, the digital files are usually printed to prop sheets and these are the documents which the director signs for approval
- So, digital technology is used in the process of film production for convenience (can be sent to various players and easily manipulated), but a physical entity is what becomes the

record and is archived

- Although all the physical assets could easily be produced digitally, 2D drawings continue to be created because they are quick to produce and easy to manipulate when showing the pieces in a meeting, for example
- The digital entities are used mostly for adding effects and refining the artwork
- The process of production has not changed in that once an individual receives an entity (digital or non-digital) he or she completes the required artwork or manipulation and passes the work on to the next person in the production process
- Digital entities are usually created by scanning artwork; Avid software then manipulates the images to create a story reel; computer animation is then used to manipulate the computer files in order to render a new version (new digital entity)
- The various digital versions do not, in practice, survive very long

1.3. What are the formal elements and attributes of the documents generated by these processes in both a traditional and a digital environment? What is the function of each element and the significance of each attribute? Specifically, what is the manifestation of authorship in the records of each activity and its implications for the exercise of intellectual property rights and the attribution of responsibilities?

- Not a large number of digital entities re produced in the production process, rather the same digital entities evolve over time as they are manipulated throughout the production process
- The software used in the production process includes:
 - Maya, Render Man, Word and Photoshop
 - Files created by Maya have to do with wireframe and other initial versions of artwork as well as rendered surface artwork
 - Original artwork is normally scanned as TIFF files; animatics are produced by Avid software and are in the form of .mov files
 - The final output for finished film is TIFF format (using Shake software)
- Word is used for word processing
- Maya is used for character modeling, rigging, animation and surfacing
- Render Man is used for rendering and lighting
- Shake is used for compositing and exporting final TIFF files for film output
- Avid software is used to work out timing and as a reference to create the animatic .mov files
- Photoshop is used for visual development and production artwork
- Storyboard panels are scanned as JPEG files
- The digital files created within the production process support the final output of TIFF files; however, these digital files are not considered especially valuable by the creator
- All of the assets created during the course of production are owned by the creator, the film studio; artwork is signed and dated by the artist

1.4. Does the definition of a record adopted by InterPARES 1 apply to all or part of the documents generated by these processes? If yes, given the different manifestations of the record's nature in such documents, how do we recognize and demonstrate the necessary

components that the definition identifies? If not, is it possible to change the definition maintaining theoretical consistency in the identification of documents as records across the spectrum of human activities? In other words, should we be looking at other factors that make of a document a record than those that diplomatics and archival science have considered so far?

- The creator only considers as records the files saved and sent to its archives
- The diplomatic analysis of the digital entities under investigation has concluded that the entities do possess the necessary elements in order to be considered as records:
 - The content of the entities is fixed since the assets are stored on back up tapes and servers
 - The documentary form of the entities is fixed in that strict naming conventions are prescribed for each entity for purposes of retrieval and preservation
 - The entities participate in the action of producing a computer graphics animated film
 - The various digital assets form a bond with each other as aggregations related to production of a final film product; naming conventions are used to identify each digital asset
 - The film studio may be identified as author, addressee, writer, creator and originator
 - The digital entities possess and identifiable context in that they created within a particular administrative and provenancial context (film studio); the entities result from a specific procedural context related to the creation of a final film product; the entities have a documentary context since they are part of the fonds of the film studio and have a particular internal structure based on naming conventions and the particular process followed for a specific film production; a technological context is identifiable in terms of the software used to create the digital entities (Maya, Adobe Photoshop, etc.)

1.5. As government and businesses deliver services electronically and enter into transactions based on more dynamic web-based presentations and exchanges of information, are they neglecting to capture adequate documentary evidence of the occurrence of these transactions?

- As new artwork is created (a manipulation of an existing piece) in the digital context, it becomes an additional layer on top of the previous iteration and the two are versions merged to form a new single file
- Previous versions are saved for a time in case it is necessary to consult previous iterations, but eventually old versions are overwritten
- Only files that have been modified are overwritten; inactive files are sent to off-line storage
- Naming conventions are used to identify digital entities and provides information on:
 - Sequence, the scene, the name of the object, numerical information to identify the version
- Physical images are numbered and once they are scanned into the Avid computer, these numbers appear and are used to link the digital images with the images on paper
- Much layering takes place in the production process in that the artwork is constantly manipulated and new versions are created in order to produce the final film (most

versions are eliminated); although final artwork is created at different stages of the production process (storyboards, animatics, animation , compositing), these pieces are not the final film product and are regarded simply as steps in the larger process

- No digital archiving program exists and it is unlikely that a specific element from a particular version could be retrieved

1.6. Is the move to more dynamic and open-ended exchanges of information blurring the responsibilities and altering the legal liabilities of the participants in electronic transactions?

- The film studio appears to have put in place strict internal security controls and established tight contracts with outside parties to ensure that responsibilities and rights are clear
- An approval process exists in order to provide access to specific files
- Strict security contracts are negotiated between the film studio and companies who make use of material created by the studio to make trailers for films, for example
- If material is used for any purpose other than stipulated in a contract, the outside contractor will never be hired again
- Legal inquiries have requested the archives to print digital documents for review

1.7. How do record creators traditionally determine the retention of their records and implement this determination in the context of each activity? How do record retention decisions and practices differ for individual and institutional creators? How has the use of digital technology affected their decisions and practices?

- Files saved and sent to the archives are considered to be records; the studio determines this
- Retention decisions are made based on legal and marketing reasons
- No specific retention schedule is in place; files are retained when there is a specific reason for it