InterPARES 2 Project
International Research on Permanent Authentic Records in Electronic Systems

Diplomatic Analysis

Case Study 09(1):
Digital Moving Images - Altair4 di Roma

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INTRODUCTION

As a single component of case study 09(1), *Digital Moving Images*, *Altair4 di Roma*, was primarily developed to highlight the activities of a small, private moving image company as compared to those of the larger cinema and television productions that are examined in other reports within this case study. This case study is part of the artistic focus of experiential, interactive, and dynamic systems studied by InterPARES 2.

The focal point of this case study is the creation of a multimedia product, *The House of Julius Polybius*, which is created by the moving images company Altair4. This project attempts to virtually recreate Polybius' house, which is located within the archaeological site of Pompeii that was destroyed in 79 AD by the eruption of Vesuvius.

The following text presents the results of the diplomatic analysis on the digital entity identified in the case study Final Report. The creator of *The House of Julius Polybius* considers all of the entities created in the course of producing the final production to be records. Therefore, it is not a single digital entity that is under examination in this analysis, but an aggregation of digital entities and the identification of their potential to be records.

The purpose of the diplomatic analysis is to assess the status of the identified digital entity as a record. Once the status of the digital entity has been determined, preservation strategies may be proposed by Domain 3.

IDENTIFICATION OF RECORD(S)

A record, as defined by the InterPARES glossary, is a document made or received and set aside in the course of a practical activity. A record must also possess all of the following five components, as established by InterPARES 1 research conclusions: fixed content and

form, embedded action, archival bond, persons and contexts. The application of the definition of a record on the creator's digital entities is therefore analyzed according to the following parameters:

1. To be identified as a record, the digital entity must possess fixed content and form,[1] and be affixed to a stable medium (or physical carrier).

As indicated by the answers to core research questions 10, 11 and 13 in the final report, 90% of the digital entities produced in the creation of the final product are preserved. Each version is identified within the project folder which is presumably affixed to the Altair4 server.[2]

2. A record must also participate in an action, defined as the conscious exercise of will by an officer of the creator or by an external person, aimed to create, maintain, modify or extinguish situations. A record results as an unintended by-product or product of the action.

The specific activities that generated the digital entities in question are house modeling, object and furniture modeling, and texture realization. These take place within the overall act of creating the virtual archaeological reconstruction of the House of Julius Polybius in Pompeii.

3. A record must possess an archival bond, which is the relationship that links each record to the previous and subsequent record of the same action and, incrementally, to all the records which participate in the same activity. The archival bond is originary (i.e., it comes into existence when a record is made or received and set aside), necessary (i.e., it exists for every record), and determined (i.e., it is characterized by the purpose of the record).

According to the answer to core research question 11 in the final report, the digital entities are saved in the project folder; according to the answer to core research question 4e, "Files are organized in directories and sub-directories. Information is aggregated in the file name."

Therefore, when the final version of the digital entities has been achieved, they are received and set aside and their archival bond is naturally accumulated within the project folder, directories, and sub-directories to which they are affixed.

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[1] The InterPARES1 Authenticity Task Force has defined fixed form as the following: 1) binary content of the record, including indicators of documentary form, must be stored in a manner that ensures it remains complete and unaltered, and 2) technology must be maintained and procedures defined and enforced to ensure that the content is presented or rendered with the same documentary form it had when set aside. (See ATF Research Methodology Statement, available at: http://www.interpares.org/documents/interpares_ResearchMethodologyStatement.pdf).
[2] The final report does not explicitly state which server the entities are affixed to.

4. Record creation must involve at least three persons, whether or not they explicitly appear in the record itself. These persons are the author, addressee and writer; in the electronic environment, one must also take into account two additional necessary persons: the creator and the originator.

- The record's **author** is the physical or juridical person having the authority and capacity to issue the record or in whose name or by whose command the record has been issued.

  Altair4 is made up of three members: Pietro Galifi whose background is artistic, Stefano Moretti whose background is in architecture, and Alessandro Furlan who possesses a TV broadcasting background. As these persons have the authority and competency for the records created in the process of constructing the House of Polybius production, they may be said to be the co-authors of the records.

- The **addressee** the physical or juridical person(s) to whom the record is directed or for whom the record is intended.

  As *The House of Julius Polybius* production was commissioned specifically by Tokyo University to be used as a product for a touring educational exhibition, a conference, and general teaching purposes, the addressee is the audience of these three enterprises.

- The **writer** is the physical or juridical person having the authority and capacity to articulate the content of the record.

  The writers of the records created by Altair4 are all of the people involved in creating the House of Polybius production. This includes Altair4 staff such as the Art Director, Coordinator, Production Director, the scientist, the editor, 3D artists, 2D artists, and consultants; and also includes the virtual reality team that consisted of archaeologists, botanists, mathematicians, and volcanologists.

- The **creator** is the person in whose fonds the record exists.

  The production itself ultimately belongs to Tokyo University who commissioned its creation; however, as the records consist not of the final production but of the records which its creation generated, the creator is Altair4.

- The **originator** is the person to whom the Internet account issuing or the server holding the record belongs.

  The final report does not specifically state on what server the records exist. It is most likely, however, that they are stored in the Altair4 server, so Altair4 would be the originator.

5. Finally, a record must possess an identifiable context, defined as the framework in which the action in which the record participates takes place. The types of context include juridical-administrative, provenancial, procedural, documentary, and technological.

- The **juridical-administrative context** is the legal and organizational system in which the creating body belongs.

  The juridical-administrative context of Altair4 consists of two main elements. The first concerns the specifications set out by the commissioning body of Tokyo University, Graduate School of Humanities and Sociology, Faculty of Letters. The House of Polybius production was specifically created to be a touring educational exhibition for the university. The second element concerns the juridical aspects of the production that have acted as controls over the production. As stated in the answer to core research question 21 in the final report, "there are legal obligations concerned with contracts and copyright."[3]

- The **provenancial context** refers to the creating body, its mandate, structure and functions.

  The primary focus of Altair4 Multimedia is the promotion of cultural and historical heritage through archaeological reconstruction represented in a variety of media. These media have included television, websites, information aids, and interactive CD Rom which are displayed at museums and other diverse institutions.

  Altair4 is interdisciplinary in nature. Although only a company of three members, it succeeded in constructing a team incorporating people from a wide array of disciplines, from areas such as applied arts, computer graphics and television directing, to archaeologists and botanists. This focus is illustrated by Altair4's views on multimedia technology as "a new and more organic tool for communication characterized by a melding of different disciplines and methodologies."

- The **procedural context** comprises the business procedure in the course of which the record is created.

  The activity described in the Final Report is the virtual archaeological reconstruction of Julius Polybius' villa. As this analysis is being conducted on an aggregation of records rather than a single digital entity, it will examine the overall procedure involved in the entire production of *The House of Julius Polybius* (even though it is a final product and not a record) instead of that surrounding a single record.[4]

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[3] No further information concerning the juridical-administrative context was included in the final report.
[4] Since this is the approach taken in the Final Report, it would be impossible to outline the specific procedures involved in the creation of individual records as this information was not provided.

Diplomatic analysis of **procedural phases** in the creation of *The House of Julius Polybius* multimedia production can be broken down as follows:[5]

a. **Initiative**: the introductory phase of any procedure is "constituted by those acts, written and/or oral, which start the mechanism of the procedure."[6]

   The initiative phase of the procedure of creating the production involves Tokyo University's commission to Altair4 to undertake the virtual reconstruction of Polybius' house in the archaeological site of Pompeii.

b. **Inquiry**: this preliminary phase "is constituted by the collection of the elements necessary to evaluate the situation."[7]

   The inquiry phase of the procedure of creating the production entails the gathering of all of the intellectual aspects of the archaeological site, as is stated in the answer to core research question 4c in the final report.

c. **Consultation**: this phase is "constituted by the collection of opinions and advice after all the relevant data has been assembled."[8]

   The consultation procedure of creating this production takes place during Altair4's assemblage of a team of experts from various disciplines who collaborate with one another on how to use virtual reality to "create a reconstruction of the greatest possible authenticity and accuracy."

d. **Deliberation**: this phase is "constituted by the final decision-making."[9]

   The deliberation phase consists of the obtainment and approval of the final version of each component of the virtual reconstruction, which is decided by the three heads of Altair4. It is at this point in the proceedings that 90% of the digital entities involved in the creation of these final products are set aside and preserved.

e. **Deliberation control**: this phase is "constituted by the control exercised by a physical or juridical person different from the author of the document embodying the transaction, on the substance of the deliberations and/or on its forms."[10]

   Although not explicitly stated in the Final Report, the deliberation control would occur when the commissioning authority, Tokyo University, approved the final product or when the final product met the conditions and stipulations set out in the commission contract.

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[5] The phases of procedure as dictated by Diplomatic Analysis; see Luciana Duranti, *Diplomatics: New Uses for an Old Science* (Lanham, Maryland and London: The Scarecrow Press in association with the Society of American Archivists and the Association of Canadian Archivists, 1998), 115.
[6] Ibid.
[7] Ibid.
[8] Ibid.
[9] Ibid.
[10] Ibid.

f. **Execution**: "the documents created in this phase are the originals of those embodying the transactions."[11] In other words, the execution phase results in the issuing of the first record capable of producing the consequences intended by its author.

   The execution phase of the procedure takes place when the final product is recorded onto a DVD and sent to the commissioning body of Tokyo University.

- The **documentary context** is defined as the archival fonds to which a record belongs and its internal structure.

  As was stated earlier in this report, the digital entities that are the subject of this analysis are stored in the project folder, directories, and sub-directories. While there is no formal record-keeping system, a "Where is it?" program is in place that enables the organization and retrieval of the entities to take place. For this program to work, one must know the filename, path, and date of production, as all information is aggregated in the filename. The conventions used in naming files comprise the folder with the project name/file, object name/number of version, and the last version file object name/final version (see core research question 4d in the final report).

- **The technological context** is defined as the characteristics of the technological components of an electronic computing system in which records are created.

  The digital entities produced by Altair4 are in the form of text, image, e-mail, database, vectorial, audio, and sound files. As stated in the answers to core research questions 4a-4b in the final report, the software implemented in the creation of these entities is 3D Studio Max modeling and rendering software, Adobe Photoshop, and Tree Storm software. Hardware was also used and consists of five dual-processor workstations which were assisted by four dual-processor Athlon AMDs. In addition, backups were made on a daily basis throughout the creation process of the digital entities, and a global backup was made of everything involved in the entire production.

CONCLUSIONS

The above analysis reveals that the digital entities created throughout the process of developing *The House of Julius Polybius* meet the requirements needed to be records. Although the actual film is a final product and a publication (and therefore not a record), all of the digital entities that are created as the by-products of its creation are set aside and so possess an archival bond with one another and a stable form and content. While a formal recordkeeping system is not in use at present, limited access to these records can be obtained and they are backed up both within the system and on a global backup. Further measures need to be taken to ensure that the records will be preserved over the long-term and to guard against obsolescence, as some of the records have already been rendered unusable after hardware upgrades.

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[11] Ibid., 116.