InterPARES 2 Project

International Research on Permanent Authentic Records in Electronic Systems

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A. Case Study Overview

The Electronic Café International InterPARES 2 case study deals with a variety of media types that were used in the creation of dynamic and interactive artworks beginning in the 1970s through to the present. The Electronic Café International (ECI) is a multi-media international network for showcasing creative, multi-cultural, multi-disciplinary, and collaborative telecommunications. For the past three decades ECI has documented the research, development and production of hundreds of collaborative art projects, and now holds thousands of hours of video and digitally stored records. The collected works include the first examples of telecollaborative art in genres covering painting, dance, music poetry, theatre, telerobotics, and telepresence in virtual cyberspace. The collection is also unique in its scale, complexity, and consistent dedication to research over many years. It represents a large part of the history and story of how artists migrated to cyberspace, decades before the Internet was created, continuing to the present.

The ECI InterPARES 2 study highlights the problems posed by multi-media record types many years after their original creation; in particular, the issues of aging materials and technological obsolescence. InterPARES approved the Electronic Café International case study in September 2003 as part of its focus on artistic activities. This case study is of particular interest, since other research thus far has only dealt with records of contemporary activities. The ECI material allows for preservation models using a bottom-up approach rather than a top-down approach, and thus focuses on problems faced by numerous organizations with similar records.

The InterPARES 2 research team is composed of Howard Besser (New York University), Shelby Sanett (AMIGOS Library Services), and Henry Daniel (Simon Fraser University), who developed the case study for Electronic Café International, and have been key collaborators in the research. Shelby Sanett, Karen Gracy, Natalie Cole and Celia Pearce contributed to the 1999 study of ECI's collection. Kit Galloway and Sherrie Rabinowitz, the co-founders of ECI also provided generous amounts of time and information to the project. Tracey Krause, Nadine Hafner, Janine Johnston and Keum Hee were the Graduate Research Assistants who participated in the InterPARES 2 diplomatic analysis.

B. Statement of Methodology

The ECI case study followed a standard InterPARES methodological approach that involved conducting an in-depth, taped interview (focused on InterPARES 2 research questions), transcribing the interview and then conducting a content analysis of the transcription.

The information gathered for the InterPARES case study on ECI was based on:

- A report written by Howard Besser titled "InterPARES 2 and the Electronic Café International: Aging Records from Technology-based Artistic Activities." This report was presented on June 14, 2004 at the Electronic Media Group Annual Meeting of the American Institute for Conservation of Historic and Artistic Works, which took place in Portland Oregon.

- A transcription of a taped interview that was conducted on April 26, 2003 at the ECI in Santa Monica. The interviewers were Howard Besser (New York University) and Shelby Sanett (AMIGOS Library Services). The interviewees were Sherry Rabinowitz and Kit Galloway of ECI. This interview was transcribed by Jessica Zacher (tape 1) and Reg White (tape 2) in January of 2004 and was edited by Mark Wolfe. The interview questions were based on key concepts such as authenticity, creation and preservation with the intended focus being discussion topics within the framework of InterPARES 2 research.

A content analysis of the transcription was conducted to explore how the key concepts discussed in the interview relate to the InterPARES 2 case study questions. The results of the data analysis of both the transcribed interview and the Howard Besser report were then utilized in answering the Project's twenty-three core research questions, in conducting a diplomatic analysis of ECI's telecollaborative work "Hole in Space" and in compiling the final report.

C. Context of Digital Entity Creation and Management

Provenancial context

The creating body is the Electronic Café International (ECI), which is an international multimedia network, established in 1988, to showcase creative, multi-cultural, multi-disciplinary, and collaborative telecommunications. ECI is known in the artistic community as being one of the pioneers in "community-based explorations of multimedia and telecollaborative cyberspace."[1] Located in Santa Monica, California, ECI's mission is to build cross-cultural telecollaborative resource sharing and informal community institutions that will foster collaboration, communication and community among individuals across cultures and encourage exploration of cultural diversity and arts in a hybrid-networked environment (Besser, 1).

Juridical-administrative context

It is unclear which laws fall under the jurisdiction of ECI; however, ECI is bound to various legal obligations as seen in contracts and third party rights, as well as providing proper authorship for each work produced. In particular, for the telecollaborative work, "Electronic Café" artists were commissioned by the Los Angeles Museum of Contemporary Art (MOCA). It is unclear who funded the other sub-collections in ECI and what role donators had in the development, management and creation of the telecollaborative works.[2]

Procedural context

There are no formal recordkeeping procedures that exist for the creation of telecollaborative works in ECI; however, the artists use the following informal procedures:

[1] Howard Besser (2004), "InterPARES 2 and the Electronic Café International: Aging Records from Technology-based Artistic Activities. Howard Besser," paper presented at the Electronic media Group Annual Meeting of the American Institute for Conservation of Historic and Artistic works, June 14, 2004, p. 1. Available at http://www.interpares.org/display_file.cfm?doc=ip2(besser)_emg2004.pdf.

[2] It can be assumed that ECI obtains the intellectual property and copyright for each of their sub-collections.

1. Planning activities leading up to the work or event
2. Executing and performing the work or event and capturing and recording substantial portions of the work
3. Documenting the work and reviewing it

The procedural components are discussed in detail in section D, questions 2 and 6.

Documentary context

ECI currently stores over twenty-five years worth of records in a variety of media, from textual to obsolete multi-media formats.[3] It is unclear, however, whether or not these records were maintained in a structured way. There are no procedures in place to control the storage, retrieval, maintenance or preservation of any of the components created in the making of the telecollaborative work.

In 1999, Howard Besser and associates, with funding from the Getty Grants Program, began to survey the ECI sub-collection of works to assess whether it would be feasible to catalogue these works for future reference. It is not known at this time if cataloguing has begun.

ECI hopes to provide online access to and preservation for the many digital entities created in each of the telecollaborative works through their "living archive." However, the creators have recognized the importance and need to attach metadata onto the digital entities for identification and retrieval purposes.[4]

Technological context

Each telecollaborative work employed specific technology to achieve its artistic intention. For example, "Electronic Café" set up video, computer and robot equipment in five ethnic restaurants in Los Angeles, where individuals could interact and exchange thoughts and messages to other 'café-goers' in the other locations. Thus, each telecollaborative work has resulted in the collection of over 3,000 hours of video, optical disks, audio recordings, and various hardware and software. The technical components of ECI are discussed in section D, questions 4 and 5.

ECI is faced with a wide variety of media types posed with the problem of obsolescent formats with no preservation strategy. During the time of the InterPARES study, the creators of ECI acknowledged the need to migrate to digital form. This is, however, only a temporary solution. It is hoped that this study will address what the key elements and digital components of records are, in order to devise a preservation strategy for the long-term preservation of the ECI's records (Besser, 7).

[3] Ibid., p.5.
[4] Howard Besser and Shelby Sanett Interview with Sherry Rabinowitze and Kit Galloway, April 26, 2003. Transcribed January 2004 by Jessica Zacher and Reg White. Edited by Mark Wolfe. [InterPARES Web site], p. 62.

D. Addressing the 23 Core Research Questions[5]

1. What activities of the creator have you investigated?

We have investigated the creators' inquiry and development leading towards these projects, the creators' early work and telecollaborative art projects leading up to Electronic Café International ("Hole in Space," Satellite Arts, Electronic Café), the Electronic Café International project itself as well as the creators' documentation of these events and archives.

2. Which of these activities generate the digital entities that are the objects of your case study?

The digital entities are generated from the activities of esthetic inquiry, research and development, and the production of hundreds of telecollaborative art projects (Besser, 1). From these activities, five basic record types have been produced:

1. Records involved in planning a work (sketches, correspondence)
2. Records involved in executing a work (hardware, software)
3. Records created by participants in the course of performing a work (digital art, collaborative writing)
4. Records that attempt to capture/record major portions of a work (composite or single-channel video feeds)
5. Records that attempt to document a work (interviews, videos and photos of participants, news coverage, e-mail from participants)

In addition, for several years the creators have been assessing the collection, creating a plan to stabilize and catalogue its contents and digitize it (Besser, 4).

3. For what purpose(s) are the digital entities you have examined created?

The overall purposes of the ECI's digital entities are to build cross-cultural telecollaborations, resource sharing, and informal community institutions that would foster collaboration, communication and community (67). Specifically, the intention was to bring people together over distances in a global collaborative environment, to put technology and a multi-media network in public places so that people could have an encounter with it, to allow technology to be a catalyst for people to work and do things together, to create a virtual space that had no limits, to create new contexts, to communicate and share ideas without the requirements of speaking the same language and to see how much human dynamics and collaboration was possible between people that actually spoke different languages.

[5] References with only a number refer to the taped transcript whereas those identified as "Besser" refers to Howard Besser's report titled, "Aging Records from Technology-based Artistic Activities," op. cit.

4. What form do these digital entities take? (e.g., e-mail, CAD, database)

The creators' digital formats include:

- DC300 XL and DC6150 data cartridges
- Removable optical media and optical video disk
- Kodak Photo CD
- Floppy Disks (various formats)
- SyQuest
- Mini-Floppy (photographic) and other photographic storage media
- Yamaha Diskalvier piano floppy disks
- CD ROM and DVD (Besser, 6)

4a. What are the key formal elements, attributes, and behaviour (if any) of the digital entities?

Not applicable.

4b. What are the digital components of which they consist and their specifications?

Not applicable.

4c. What is the relationship between the intellectual aspects and the technical components?

The ideas and aspirations of people separated by geography have a technological infrastructure in which they can convene and do things together (12).

4d. How are the digital entities identified (e.g., is there a [persistent] unique identifier)?

Not applicable.

4e. In the organization of the digital entities, what kind of aggregation levels exist, if any?

Not applicable.

4f. What determines the way in which the digital entities are organized?

Not applicable.

5. How are those digital entities created?

The digital entities were created using the following electronic devices:

- 12 computers and servers
- 25 peripheral computer devices
- 30 video production, processing, and display devices

- 22 audio and MIDI production devices
- 30 specialized teleconferencing devices
- 18 customized, one-of-a-kind 'homebrew' devices
- 25 Descriptions of industry networks satellites, and communications systems and services
- 40 Sub-systems, components and devices (Besser, 6)

The early works leading up to Electronic Café International were created using global connectivity technology, which in the mid-70s involved satellites and dial-up phone networks (25). The "Hole in Space" project documented individuals interacting through giant rear projection screens (no viewing monitors were used so individuals were not aware they were being seen) (10). ISDN was also utilized (12). For later projects, a wide variety of cheap narrow band technology and broadband technology was used and the creators would Web cast (17). Today, all of the public ECI events and activities are video & audio cybercast using a JAVA-based technology requiring no plug-ins to view (ECI Web site).

5a. What is the nature of the system(s) with which they are created? (e.g. functionality, software, hardware, peripherals etc.)

Not applicable.

5b. Does the system manage the complete range of digital entities created in the identified activity or activities for the organization (or part of it) in which they operate?

Not applicable.

6. From what precise process(es) or procedure(s), or part thereof, do the digital entities result?

Essentially, the creators' records are the result of informal processes and procedures, which generally proceed as follows:

a. *Planning activities leading up to the work or event* (The first step is to document the ideas. This process begins with drawings about the creators' ideas. Writings, which were proposals, were then made that included drawings. After that it went to video tape, slides, sketch books, idea books, and notebooks. In organizing projects, audio tapes of phone conversations were made to record conversations with funders and other people involved in the projects).

b. *Executing and performing the work or event and capturing and recording substantial portions of the work* (The events themselves, as they are played out, use and create digital entities, and are documented using and ultimately producing digital entities).

c. *Documenting the work and reviewing it* (Digital records and entities are created after the event in reviewing it (i.e., interviews, news coverage, etc.) as well as from the processes of backing up work and digitizing it).

7. To what other digital or non-digital entities are they connected in either a conceptual or a technical way? Is such connection documented or captured?

The creators' collection is extensive and consists of a variety of media that are interconnected. The collection includes more than 3,000 hours of optical disks, video and audio recording, equipment, electromagnetic storage media, computer back-up media, text, paper documents, drawings, photos and other types of images (Besser, 4). The works that use and create digital entities are first described on paper. The paper-based collection spans a time period of approximately twenty-five years and consists of books, pamphlets, magazines, newspapers, clippings from newspapers and magazines, thermographic paper, textual documents, and original artwork (Besser, 5). There are also black and white and colour photographs, 35 mm color slides, 3-D slides and stereo graphic slides, projectors, twenty-two carousals slide projectors linked together by punched tape, as well as art objects and toys made of a variety of materials such as plastic, vinyl, paper and metal. The electronically stored materials consist of "zip disks," "floppy disks," Optical Memory Disks and Optical Disk Cartridges (Besser, 5). In addition, there are optical drives, hard disks, analogue recordings and a computer networked bulletin board, which is stored on a data spool tape (29).

The following list summarizes the formats found in the collection with date spans listed in parentheses:

- 3/4" U-matic (1972-1993)
- 1/2" open reel (1971-1979)
- 1" Sony (1981)
- VHS (1/2")(1979-1999)
- Audiotapes (cassette) (1973-1995)
- Betacam (1/2") (ca. 1987)
- S-VHS (1988-1996)
- 8mm, Hi8 (1983-1999)
- Betamax (1/2") (ca. 1990)
- Betacam SP (1/2") (ca. 1993) (Besser, 5)

8. What are the documentary and technological processes or procedures that the creator follows to identify, retrieve, and access the digital entities?

Although the creators did not discuss the processes or procedures used for identifying, retrieving and accessing their digital entities, they did discuss their goals and future plans:

- The creators believe that widespread access to the collection is extremely critical and that on-line access is essential. The ephemeral events are already dead so it's the information that is important (48).

- The creators believe that the material in the collection is adequately comprehensible but that it requires narratives to tell the different stories that can be told (i.e., the technical story, the human story, etc.). The records are going to need metadata attached to them to supply context. (42-43, 60).

- Ideally, the creators want to see the archive as a living archive accessible on the net with metadata. The living archive "will accommodate other peoples' contributions, memories, and things after the fact. Now that won't have the metadata behind it to be part of the relational database so it; just sort of be a separate section that accommodates other peoples' inputs, contributions, memories, pictures that they might have an event that we didn't have that they want to contribute, other people relating who do similar kind of work now, whatever, that's the living archive part. To mirror that we're also going to say, because there's so much material, that apart from having an accommodation for people to add things, we're going to have the accommodation of people to take things out. . . " (62).

9. Are those processes and procedures documented? How? In what form?

As previously mentioned, the creators did not discuss the specific processes or procedures that were used and similarly, the documentation of this was not discussed either. The creators did comment, however, that a lot of things happened that simply were not recorded and that it is almost impossible to adequately document experiences such as these because it is all experiential and ephemeral (38).

10. What measures does the creator take to ensure the quality, reliability and authenticity of the digital entities and their documentation?

The creators are not very concerned about authenticity or reliability. They believe that there are no emulation issues with the work because it is the forensic evidence of the work that is important and not the reinstalling of the work—a process that would require consideration of authenticity and reliability issues (50-52). The creators do, however, have some requirements in terms of quality and faithfulness and want all of the documentation to be faithfully recreated and preserved. One of the ways that the quality of the records and documentation is ensured is via the parties (reunions to document past events) because these bridge broken links or discontinuities in the documentation by allowing participants to comment on the experience and fill in what they think is missing. These parties provide additional information and fill in missing metadata on existing records in order to complete the records (33-35). In addition, the creators believe that the physical medium is not important as long as the look is faithful in terms of aspect ratio, which is very important to the creators, along with a faithful reproduction of color, hue, size and sometimes font. The creators also want the informational content to be as faithful as possible and for the human story to be made a part of the preservation of the records (55-56). According to Howard Besser, the complexity, scale and many years of consistent dedication to research is what distinguishes the quality of the ECI collection documentation (Besser, 4).

11. Does the creator think that the authenticity of his digital entities is assured, and if so, why?

The creators believe that most of the ECI archives can simply be migrated to digital surrogates without problems of authenticity (36). The creators are not concerned with these issues because of the belief that the value of the work is experiential and saving performance pieces in their completeness is not necessary. The value is assigned to the documentation and the ideas, not to what media type they are on, so migration is not seen as a threat to authenticity or integrity (47-

48). It is not necessary for the physical medium and type of software that represents the works to remain the same, as these are not intrinsic to the art. With the exception of motion video where the creators believe authenticity is not assured, the creators generally believe that once material is digitized, it is preserved until it needs to be migrated (44). The creators do express some concern about long-term stability and about the digitizing process itself particularly for motion video (60).

12. How does the creator use the digital entities under examination?

The creators use the digital entities for producing works, for documentation of works, as an integral part of the work. The creators also use the digital entities for their parties, which are reunions in which people who were involved in a particular event gather to review some of the documented material about the event. This is done to refresh people's recollections and to record their comments. The parties are therefore held to tie together broken links or discontinuity, to discover lost names and information, to document the participants' twenty year later impressions and reflections of what happened and to look at what the impact of that event has been on people since. Ultimately, the parties are held to help complete the records (34).

13. How are changes to the digital entities made and recorded?

Not applicable.

14. Do external users have access to the digital entities in question?

It is the hope of the creators that external users will experience a redistributed work of ECI and have access to all of the relevant parts through an online "living archive" (48-49).

15. Are there specific job competencies (or responsibilities) with respect to the creation, maintenance, and/or

Not applicable.

16. Are the access rights (to objects and/or systems) connected to the job competence of the responsible person? If yes, what are they?

Not applicable.

17. Among its digital entities, which ones does the creator consider to be records and why?

The creators regard records as products that are created as part of the telecollaborative art events. The creators did not specify which digital entities in particular were to be considered records.

18. Does the creator keep the digital entities that are currently being examined? That is, are these digital entities part of a recordkeeping system? If so, what are its features?

18a. Do the recordkeeping system(s) (or processes) routinely capture all digital entities within the scope of the activity it covers?

No. ECI is ephemeral and by its definition it is impossible to capture all the elements that contributed to the performance. Thus, the work will never be fully recorded or captured (38).

18b. From what applications do the recordkeeping system(s) inherit or capture the digital entities and the related metadata (e.g., e-mail, tracking systems, workflow systems, office systems, databases, etc.)?

It appears that metadata was captured by the artists during creation and will need to physically be identified and attached to the various records; however, this process is ambiguous and was not elaborated (62).

18c. Are the digital entities organized in a way that reflects the creation processes? What is the schema, if any, for organizing the digital entities?

Not applicable.

18d. Does the recordkeeping system provide ready access to all relevant digital entities and related metadata?

Not at the present time.

18e. Does the recordkeeping system document all actions/transactions that take place in the system re: the digital entities? If so, what are the metadata captured?

The creators have identified that records will need to have metadata attached to them and this will require creators to rely on the memories of those individuals or "parties" involved in the creation and implementation of the various telecollaborative art projects (43).

19. How does the creator maintain its digital entities through technological change?

The creators plan to migrate their analogue and other records to a digital form (45).

19a. What preservation strategies and/or methods are implemented and how?

Digitalization is used for 3-dimensional objects, in particular taken in Quick Time VR (45, 54).

19b. Are these strategies or methods determined by the type of digital entities or by what criteria?

Preservation strategies are partly determined by the type of entity, but mainly results from the needs of the creators (46).

20. To what extent do policies, procedures, and standards currently control records creation, maintenance, preservation and use in the context of the creator's activity? Do these policies, procedures, and standards need to be modified or augmented?

The creators develop their own policies, procedures and standards; therefore, there are no specific and general criteria some however are based on the artistic concerns and the human system engineering networks of people. This can be interpreted as meaning that some policies derive from the communication and network between the various artists and individuals involve in the telecollaborative art projects.

21. What legal, moral (e.g., control over artistic expression) or ethical obligations, concerns or issues exist regarding the creation, maintenance, preservation and use of the records in the context of the creator's activity?

Certain performances cannot be recreated until third parties have released their rights (61). Each work was created in a context where individuals and artists were aware that ECI owned the rights to the telecollaborative work. There are particular rights and residuals pertaining to the sharing of property and authorship, but no specific rights or policies are stated by the creators.

22. What descriptive or other metadata schema or standards are currently being used in the creation, maintenance, use and preservation of the recordkeeping system or environment being studied?

Not applicable.

23. What is the source of these descriptive or other metadata schema or standards (institutional convention, professional body, international standard, individual practice, etc.)?

Not applicable.