Media Art Conservation in the European Union and American Spheres: A Case Study of ZKM Center for Art and Media Karlsruhe and Whitney Museum of American Art

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Technology innovation has always led to changes in artistic practices and generated a rethinking of traditional concepts of what constitutes an artwork. In connection with media art[1], this departure reflects primarily new production and distribution. In recent decades, while media artists were systematically using new techniques and modes of presentation in their creations, museums' traditional tasks have been confronted by the challenges that come with mediating art that is performative, process-oriented, dynamic, and ephemeral.[2] In September 2020, I interviewed Bernhard Serexhe — the previous chief curator of the ZKM, and Savannah Campbell — digital media specialist at the Whitney Museum of American Art. During our conversations, I had the opportunity to look at both museums and know how different social systems influenced art institutions' media art conservation. Using the case of conservation projects at both the ZKM and the Whitney Museum, this article also explored the methods, challenges, and ethics of media art conservation in both the European Union and American Spheres.

Social Influences on Media Art Conservation in the European and American Spheres

Funding models

"In 1989, when we started to build and work on the content of ZKM Center for Art and Media Karlsruhe, we had an idea that without any obstacles: digitization would save the world!

[1] In today's usage the terms *media art* and *media works* are understood to refer not to prints, painting, or photography, but rather to works based on the creative use of electronic and digital technologies.
[2] Bernhard Serexhe, "After us, the deluge? Introductory remarks on system change in the preservation of art" (unpublished manuscript), 5.

There was a big enthusiasm for this. We never thought about possible preservation problems." said Bernhard in our interview. Later on, the staff at the ZKM perceived that some media artworks in the collections would not be able to work much longer, and the problems were hard to detect[3]. Therefore, by 2005, it became clear that the museum had to invest lots of works and money in analyzing problems and finding solutions that were not much fit for the traditional art conservation ethic[4].

In Europe, cultural education is part of the social sphere, which is dependent on public funding. Like many museums in Europe, the ZKM has had one hundred percent public funding (about fifteen to twenty million euros per year) since the beginning, which is composed of funding from the city government and Karlsruhe's regional government. The museum staff, including the conservators, at the ZKM, were fully reliant on public funding. If they want to do something extra for which they do not have the money, they will address it to public funding institutions. No one else, except the director and the staff members of the ZKM, can decide how to use all the funding they received. Since the ZKM gains autonomy in its decisions, its conservation tasks and research can be developed consistently.

Whereas, in America, fundraising is not easy for institutions focusing on modern and contemporary art. "Like many non-profit art institutions in America, our funding relies a lot more on wealthy individual donors. And, I think the different funding models have a big impact on art institutions in both regions," mentioned Savannah during our conversation. The Media Preservation Initiative (MIT) that Savannah is working at was launched by the Whitney Museum

[3] There might be a bug, an update of the software, or new equipment.
[4] The traditional art ethic insists the restored artwork should be exactly the same as the original one. But, it is not true for digital artworks.

of American Art in 2018. It was initially funded by an art foundation for the first year. And its' later funding came from a private donor. "For many donors, they would like to see their donation go to a specific project rather than to the museum as a whole," Savannah added[5]. Since the Whitney Museum collected various artworks and tried to get intellectual control of their multimedia holdings, the museum has done other similar projects to MIT. The first round was focused on art on papers, such as drawings and prints. The second round was dedicated to preserving paintings and sculptures. The third round in that line is MIT, which is a three-year-long project. The limited public funding, the potential interferences led by private financing, and the unsustainability caused by dedicated projects' provisionality could add lots of difficulties to process consistent media art conservation and related research. Like the Whitney Museum, many art museums in the United States are confronting these challenges.

Audiences' Responses

The ZKM was opened to the public in 1997. The audiences were fascinated when they stepped into the exhibitions with digital and interactive artworks. But, at the same time, they were confused. Soon after, even less than five years, visitors got familiar with this art form, and they quickly got bored. A similar transition to the audiences' behaviors also happened in the US. In media art shows at both Europe and America's art institutions, it is not surprising to see everyone wandering around from one installation to another, expecting something even more brilliant, funny, and engaging.

[5] Savannah Campbell, interview by Jing Zhao, "Interview with Digital Media Preservation Specialist Savannah Campbell" (unpublished manuscript), October 28, 2020.

The question is: will visitors' reactions influence politics in terms of affecting media art conservation? Although the ZKM has public funding annually, it is certainly not as easy as it seems. The museum had to justify what they did and show the big visitor numbers. "Politicians always would ask for the number of audiences that visited us. The numbers were increasing, but for politicians, they were never big enough,"[6] Bernhard mentioned in the interview. For art institutions in the US, audiences' number also shows its significance in grant and fund application, which could influence the conservation of media art.

On the other hand, to be conserved by institutions, media artworks should be firstly collected by them. Since people are currently living in a speedy world, they gradually lost their patience. They would not stay with one artwork for 5 minutes. But many time-based media artworks take more than ten minutes or twenty minutes to experience. Does it mean art institutions need to meet audiences' desire for instant satisfaction by only collecting certain kinds of media artworks? It is an open-ended question.

The Methods, Challenges and Ethics of Media Art Conservation

Conserving time-based media artworks is not regular conservation of projects in the sense of dusting things off, refinishing surfaces, or anything like that. It is much more of a detective mission. The storage of artworks that use physical media-equipment has proven short-term at best, as hardware can quickly become obsolete, facing the risk of losing data.[7] The

[6] Bernhard Serexhe, interview by Jing Zhao, "Interview with Bernhard Serexhe" (unpublished manuscript), November 24, 2020.
[7] Alain Depocas; Jon Ippolito; Caitlin Jones, *Permanence Through Change The Variable Media Approach* (New York: Guggenheim Museum Publications, 2003), 129.

durability of technical storage media[8], electronic tools[9], and presentation technologies[10] is also questionable due to unstoppable technical processes and the lack of availability of the required playback devices on the market. In addition, capturing the live aspects of works such as net art, performance art, and live electronic music is notoriously difficult.

Confronting each type of these challenges, the strategies digital media conservators are considering and using right now are 'Storage,' 'Migration,' 'Emulation,' and 'Interpretation.'[11] 'Storage' refers to the basic preservation task, which is storing the hardware. 'Migration' means upgrading the work's original format to a more current one. 'Emulation' is often used by conservators for restoring computer-based artworks, which is getting the old software to play on new hardware. "Interpretation" can be comprehended as reinterpreting the work for a higher platform.

Considering every media artwork is different, the strategies are not fixed. Conservators have to make decisions on a case by case basis. When they engage in the conservation of media artworks, their methods often mirror those used by the artists themselves.[12] This process involves analytical thinking to balance the work's original look and its future's viewability through conservation. Sometimes, they even have to confront ethical questions.

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[8] Laserdiscs, magnetic tapes, record albums, etc.
[9] Microphones, cameras, interfaces, etc.
[10] Television, computer, video, radio, etc.
[11] Christiane Paul, "From Archives to Collections: Digital Art in/out of Institutions," January 12, 2016, lecture video, 1:00:33, https://www.youtube.com/watch?v=283LtZNmy5M
[12] "Designing the Future of Design: A Vision for Collecting Digital Design at the Cooper Hewitt, Smithsonian Design Museum," Small Data Industries, accessed December 5, 2020, https://opensource.smalldata.industries/research/designing-the-future/

Conserving Nam June Paik's *Fin De Siecle II* at the Whitney Museum of American Art

Nam June Paik was a pioneer of video art who shaped the language of that art form. One of his most important pieces is *Fin de Siècle II* — a video installation with 207 television sets with seven video channels.[13] Paik initially created this work for the exhibition — *Image World*, which took place at the Whitney Museum in 1989. It didn't initially enter the museum's collection at that point. Instead, it was sold privately and installed on a beach in Hawaii, which is not ideal for displaying artwork with so many electronic devices. All the video installation elements were exposed to the weather, accelerating the obsolescence of the work. Later, it was donated back to the Whitney Museum in poor condition.[14]

Soon after *Fin de Siècle II*'s arrival, the Whitney Museum decided to resurrect to bring it back to its previous state as close as possible. A specific restoration project was launched, and it took the project team almost a year to complete the mission because of the various difficulties they confronted. The project was guided by the documentation report of *Fin de Siècle II*, which contained the instructions for the installation. Nevertheless, it only showed some old wiring diagrams that were drafted for exhibiting the work in the first place. The team has to go back and look very closely at what images were on which television.[15] Senior technician of Whitney's Exhibitions and Collections Management department — Richard Bloes participated in the restoration tasks and provided excellent technical and referential support for

[13] "Nam June Paik: Fin de Siecle II, 1989," Whitney Museum of American Art, accessed December 5, 2020, https://whitney.org/collection/works/8532
[14] Campbell, 6.
[15] "Conserving Nam June Paik's Fin De Siecle II, 1989", accessed December 5, 2020, video, 3:25, https://whitney.org/media/39545

reinstalling this piece since he was one of the staff members who handled and experienced the original work in 1989.

The strategy of restoring videos stored on the obsolete laserdiscs was clear — migrating them to another storage device. However, the CRT[16] TVs that previously displayed the videos were corroded. The question of how to replace them became the most significant challenges that the project faced. The decision was philosophical and ethical. It was a large process of acquiring these older TVs on the market. The team could not get enough monitors that were the same model and size as the original work device. “Nam June Paik would take what was available. If that were the case, then we would have to buy new ones and start with flat screens or do something different,” said Carol Mancusi-Ungaro, associate director for conservation and research at the Whitney Museum.[17] Later, it took the museum about five years to get this video installation exhibition ready. It was eventually shown in the Whitney Museum’s exhibition - *Programmed: Rules, Codes, and Choreographies in Art, 1965-2018* in 2018. By carefully observing the restored *Fin de Siècle II* in the exhibition, we can notice a couple of videos were displayed on flat screens.

[16] The cathode-ray tube (CRT) is a vacuum tube that contains a phosphorescent screen and electron guns.
[17] “Conserving Nam June Paik’s Fin De Siecle II, 1989”, accessed December 5, 2020, video, 3:25, https://whitney.org/media/39545

Figure 1: Nam June Paik, *Fin de Siecle II*, 1989, video installation, 168 × 480 × 60in, Whitney Museum of American Art, New York. Retrieved from https://www.google.com/url?sa=i&url=https%3A%2F%2Fwhitney.org%2Fexhibitions%2Fprogrammed&psig=AOvVaw128KtISP5DrG8Hmsvofa60&ust=1607317082588000&source=images&cd=vfe&ved=0CAIQjRxqFwoTCKipnfHIuO0CFQAAAAAdAAAAABAD

Conserving Jeffrey Shaw's *Legible City* at the ZKM

The case of preserving Nam June Paik's work at the Whitney Museum leads to a controversial question for many museums: is media art conservation about making a copy of the original piece using exactly the same material, or is it about making the same representation of the original artwork's idea? In 2010, when the ZKM faced the increasing technical difficulties and ethical issues in their collections, the *digital art conservation* project funded by the European Union's Research Program was launched at the museum to analyze, evaluate, and test the existing media conservation strategies.[18] After various discussions, case

[18] "Project Aims" digital art conservation, accessed December 5, 2020, http://www.digitalartconservation.org/index.php/en/about.html

studies, and practices, one of the most important results that the project spotted is that as long as the institution has the same hardware as the original one, the conservators must use it. According to Bernhard in his interview, the ZKM had the occasion to get about 1800 CRT TVs donated by a local TV station in Karlsruhe. Although those TVs have taken a large storage space capacity, the museum still felt very proud to have the early equipment because they could replace some early video installation monitors when necessary.

However, what about the situation that the same hardware is no longer available? This problem was discussed in the conservation process of *Legible City* at the ZKM, which also was one of the case studies that the museum staff conducted in the *digital art conservation* project. Jeffrey Shaw created this piece in 1989. It was the first real-time interactive media artwork that consisted of an SGI Indigo, a Linux PC, a custom-built stationary bicycle, an LCD monitor, and an analog-to-digital converter.[19] When *Legible City* was exhibited, the visitors operated the stationary bicycle positioned in front of a screen to simulate a bicycle ride through the streets of Manhattan, Amsterdam, and Karlsruhe.[20] Similar to many early digital artworks, various aging problems occurred years after the creation of *Legible City*. The big, powerful, and high-class computer that generates the graphics became obsolete. The original kind of computer costs more than one million dollars and is unavailable on the market. It has been a long and challenging time for the museum to find an appropriate way to conserve the work.

[19] Chiara Marchini Camia, Bernd Lintermann, Arnaud Obermann, and Claudia Rock, "Jeffrey Shaw, The Legible City (1989-1991)," in *Preservation of Digital Art: Theory and Practice* (Vienna: Ambra V, 2013), 489.
[20] "Legible City," Jeffrey Shaw Compendium, accessed December 5, 2020, https://www.jeffreyshawcompendium.com/portfolio/legible-city/

Figure 2: Jeffrey Shaw, *Legible City*, 1988, Computer-based installation, Installation dimensions variable. Retrieved from https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.jeffreyshawcompendium.com%2Fportfolio%2Flegible-city%2F&psig=AOvVaw1UemTJZwo8Nfwmzf5dt_Fo&ust=1607317314608000&source=im

The final solution that the ZKM took into practice was migrating the original software to a small MAC mini, which is powerful enough to generate the graphics. The challenge was how to migrate it since MAC mini would not accept the early software. The conservation team finally found a programmer that understood the old C++ coding language and was able to emulate it to a new one. Four months later, after the first migration step was completed, the museum staff found the restored work did not work in the same manner[21] as the original one. But, after one-year-long consistent work and patient adjustment made by the gentle programmer and technicians, the restoration project turns out to be a great success. The first occasion to show this work again was at ICIS Center in Tokyo. Jeffrey Shaw was also invited to see the restoration result of his original creation by visiting the show. The presentation received his absolute

[21] Its color was wrong, and the speed of the work did not adapt to the person riding the bicycle.

positive feedback. The success of conserving Jeffrey's *Legible City* reflected another critical result that the *digital art conservation* project spotted: As long as the conservators can preserve the representation of the artist's idea and the look of the work, they are allowed not to mind the technology behind. "I was there at the ICIS Center. It was like a miracle for such a small computer to operate this interactive piece so well. The installation run by a new operating system brought the same experience of the original,"[22] said Bernhard.

Conclusions

The comparison between the ZKM and the Whitney Museum of Art revealed how different social policies would potentially shape conservators' work when it comes to the necessity of preserving contemporary art, and more specifically, electronic and digital art. It also raised a question to the museum professionals who are responsible for making decisions about which works ought to survive: Because of the extreme technical difficulties in a situation of shortages (such as financial shortfall) caused by local policies, how do museums maintain their capabilities of prevailing high standards in the conservation of media art? The case study of conserving Nam June Paik's *Fin de Siècle II* and Jeffrey Shaw's *Legible City* suggested several aspects that museums should be aware of besides the regular digital media conservation strategies, such as the documentation of the work, the collection storage, the artists' opinions, and ethical questions.

Although this article mainly focused on the media art conservation in the European Union and American Sphere, we should not be limited by these two regions. And generally

[22] Bernhard Serexhe, interview by Jing Zhao, "Interview with Bernhard Serexhe" (unpublished manuscript), November 24, 2020.

speaking, the best thing we can do now is not going to be the best we can do after ten years, or even shorter than five years. For media art conservation, everything has to be kept on and improving.

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