Challenges for a Ubiquitous Museum: Presenting and Preserving New Media

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The characteristics of the digital medium pose numerous challenges to the traditional art world, ranging from presentation to collection and preservation. For the longest time, museums, galleries and the art world and art market in general have been mostly "object-oriented" and have configured their framework and infrastructure to accommodate the presentation and preservation of the static art object. The characteristics of so-called new media art have introduced a shift from the object to process: as an inherently time-based, dynamic, interactive, collaborative, customizable and variable art form, digital art resists "objectification" and has changed traditional notions of the "art object."

The one thing everyone seems to agree upon when it comes to this art form is that the term now commonly used to describe it -- "new media" -- is an extremely unfortunate choice. This umbrella term is not at all helpful when it comes to describing characteristics or aesthetics of the extremely hybrid digital medium. The qualifier of choice here, "new," points to the fleeting nature of terminology: in the late 20th century, the term "new media" -- previously used mostly for film / video -- made a fluid transition from analogue to digital media.

Within the category of digital art, one needs to distinguish art that uses digital technologies as a tool as opposed to a medium. There are artists who use the technologies as a tool for production of a more traditional art form, such as a sculpture or print, or as tool for storage and delivery. Digital print, photography, and sculpture represent the object-oriented work museums are equipped for and do not necessarily require completely new models of presentation and preservation.

The use of digital technologies as a medium implies that the work is produced, stored, and presented in digital format and makes use of the inherent possibilities of its medium. However, art that uses digital technologies as a medium can manifest itself as everything ranging from an interactive installation (networked or not), purely Internet-based art, virtual reality projects, art for mobile devices (such as cell phones and Palm Pilots) and other forms.

Each of the distinguishing characteristics of the digital medium (which do not necessarily all surface in one work and are often used in varying combinations) -- time-based / dynamic, interactive / participatory, customizable, variable -- poses its own set of challenges. The fact that new media projects are time-based and require an extended viewing time isn't necessarily medium-specific but equally applies to video works or performances. It is noteworthy that the latter have for the longest time been an exception to the mostly object-based art world rather than the rule. After approximately three decades, video now seems to have found an established, safe place in the art world but the museums relationship to performance or sound as art forms remains a problematic one. While an artwork that needs to be experienced over an extended period of time poses a challenge per se, the time-based nature of new media art is far more problematic than that of film / video,

which still presents itself as a linear finished "product." New media art, however, is potentially dynamic and non-linear: even if a project is non-interactive, the viewer may be looking at a visualization that is driven by real-time data flow from the Internet (and will never repeat itself) or a database-driven project that continuously configures itself over time. Walking into a gallery space and spending only a couple of minutes with a video is not an ideal or desirable experience for a viewer, but it at least gives a glimpse and brief impression of the project. Spending the same time with a new media project will often reveal much less: the viewer might only see one possible configuration of an essentially non-linear project. The context and logic of how and why that particular sequence is unfolding at that particular moment in time will remain unclear. While every art project is embedded in its own specific context, the shift towards a dependency on context increases with new media works that require information about which data (in the broadest sense) is being shown, where it is coming from, and according to which logic it is configured.

The fact that new media art is potentially interactive and participatory -- allowing forms of navigating, assembling, or contributing to the art work that go beyond the interactive, mental event of experiencing it -- further complicates matters. One of the biggest challenges for the presentation of new media art is to engage the audience for a period of time that is long enough to allow a piece to reveal its content. The basic rule of museums, "Please do not touch the art," suddenly does not apply anymore and large segments of the audience are still hesitant to physically engage with the artwork in a gallery space. Moreover, new media art often requires a certain familiarity with interfaces and -- despite the fact that computers seem to have become ubiquitous -- one can still not presume that every audience member will be an expert in navigation paradigms.

New media art often requires the creation of platforms of exchange -- be it between artwork and audience or the public space of a gallery and the public space of a network etc. On the one hand, there are practical challenges, such as the need for continuous maintenance and a flexible and technologically equipped exhibition environment, which museum buildings (traditionally based on the 'white cube' model) can not necessarily provide. On the other hand, there are numerous conceptual issues and the continuing need to organize of educational programs for the audiences in order to make them more familiar with this still emerging art form.

1. *Presentation Models*

If one presents new media art within the museum space, it is always recontextualized and often reconfigured. While there are new media projects that can be installed according to specified parameters (such as height, width, defined lighting requirements), the variability and modularity inherent to the medium often means that a work can be shown in very different ways. Variability entails a fluent transition between the different manifestations that a "virtual object" can take: in some cases, the same work could potentially be shown as an installation, projection, or within a kiosk set-up. Ultimately, the physical environment should be defined by what an artwork requires and it is important to establish a connection between the physical and virtual space.

Digital technologies make us reconsider our traditional notions of space and architecture, and many efforts are currently being made to translate the characteristics of virtual spaces and information architecture into physical space. A "ubiquitous" museum would have to be a parallel, distributed, living information space that is open to artistic interference -- a space for exchange, collaborative creation, and presentation that is transparent and flexible.

While the traditional museum or gallery does not provide this flexibility, numerous projects (within or outside of an art context) have proposed a merger of virtual and physical architecture. An example would be the project "*Arch-OS*" -- an "Operating System" for contemporary architecture (http://www.arch-os.com) -- produced by the Institute of Digital Art & Technology (http://www.i-dat.org) and members of the STAR and CNAS research groups based in the School of Computing, Communications and Electronics at the University of Plymouth. The project strives to make invisible and temporal aspects of a building tangible and provide artists, engineers, and scientists with an environment for developing transdisciplinary work and public art. Consisting of integrated hardware and software, the system uses various embedded technologies to capture audio-visual and digital data from a building through sources such as the Building Energy Management System (BEMS); computer and communications networks; the flow of people and social interactions in the building; as well as ambient noise levels; and environmental conditions. The data can be experienced through audio-visual projection systems within the building and can be broadcast externally via streaming over the Internet and FM radio technologies. Among the projects created on the basis of the system are "*Flock*" (Fig. 1), which uses the vision and audio tools to translate the movement and numbers of people in the atria of the building into a flock of birds, which pan through the three-dimensional space in the atria defined by twelve speakers; "*WAP Architecture*," a 3D representation of the use of the building versus the activities on the i-dat.org web site; and "*Waterfall*" (Fig. 2), which is mapping the water consumption of the building and visualizing it in the atria, creating an awareness of water usage. Projects such as *Arch-OS* create a new kind of platform for cultural activities that supports exchanges between the virtual and physical environment.

In the context of an art exhibition, the decisions that need to be made in establishing connections between virtual and physical space ultimately have an effect on the aesthetics of the work and ideally should be the result of a collaboration between the curator and artist(s). Installations of digital art obviously already create a distinct presence in physical space that can be reconfigured as appropriate.

The presentation of Internet art within the museum or gallery space raises some additional questions. Net art has been created to be seen by anyone, anywhere, anytime (provided one has access to the network) and does not necessarily need a museum to be presented or introduced to the public. While net art exists within a (virtual) public space, it seems to be particularly difficult to "connect" it to the public space of a gallery. There have been multiple approaches to showing this art from, which all have their advantages and disadvantages.

Some works of net art lend themselves to presentation through installation and / or physical interfaces because they address notions of space. Others work well as a projection -- these are often works that have not been created for a browser window and beg to get out

of it. Yet others need to maintain their inherent "netness" and require one-on-one interaction through the physical set-up of a computer with monitor.

The often criticized "ghettoization" of net art in a separate lounge area with computers and screens is sometimes brought about by technical requirements. However, the set-up in a lounge area invites people to spend more time with a piece, and net art tends to ask for an investment of time that does not serve the short attention span of the average museum visitor.

Another model for presenting net art is the "online only" exhibition. While this approach preserves the original context of how the art is supposed to be seen, it provides only a limited control over how a work is experienced by the viewer. Net art projects have numerous requirements, ranging from browser versions to plug-ins, minimum resolution, window size etc. Some of these requirements can be accommodated on the museum's side, but most of them have to be fulfilled on the viewers' end. While this obviously applies to the experience of net art in general -- for example, on someone's home or office computer -- lack of accessibility seems to become more of an issue if the work is presented as part of a curated exhibition on a museum web site. Viewers may perceive their inability to view a work (because their computer, monitor, or connection does not support its technical requirements) as more annoying if they took the time to "visit" an exhibition organized by a museum, which they hold responsible for providing an experience of art.

An important issue for presenting both installations or net art is whether a piece was created for multiple participants or a single user. A multi-user project tends to work better in public space while watching someone else navigating a work may be frustrating (similar to giving someone else control over a TV's remote control and watching them surf channels). However, some people who would have been hesitant to take over the input device -- be it a mouse, joystick, keyboard or something else -- and explore a work get engaged by watching other people and learning how to use the interface. Decisions about the presentation of a new media work within a gallery have to be made on a case-by-case basis. New media projects tend to be vehicles for communication and exchange (in various forms) plays a crucial role in the process of producing and presenting them.

2. *Collaborative Models and Platforms of Exchange*

As an art form that is by nature hybrid and participatory, new media has a profound influence on the roles of the curator, artist, audience, and institution. Curators have to increasingly work with the artist on development and presentation of the work. Their role becomes less that of a "caretaker" of objects (as the original meaning of the word suggests) and increasingly shifts to the function of a mediator and interpreter or even producer. The artist often turns into a mediatory agent and facilitator -- both in terms of working and supervising a collaborative team and enabling audiences' interaction with and contribution to the artwork. The public and audience often turns into a participant in the artwork -- a notion that runs counter to our idea of the museum as a shrine for contemplating sacred objects. All of these issues require that art institutions, at least to some extent, reconfigure themselves and adapt to the demands of the art. In terms of the changes that all of these

traditional roles are undergoing, the notion of collaboration is the key concept for alternative models.

The necessity of a closer collaboration between curators and artists is mainly due to both the development process of the work -- which may be a collaboration between several artists in the first place -- and its presentation within the physical space.

The collaborative model also is a crucial concept when it comes to the artistic process itself. Apart from the fact that new media works often require a complex collaboration between artists, programmers, researchers, scientists (whose role may range from that of a consultant to a full collaborator), there also are works where an artist establishes a framework in which other artists create original works. Lisa Jevbratt's "*Mapping the Web Infome*" (http://spike.sjsu.edu/~jevbratt/lifelike/) and "*Carnivore*" by Alex Galloway and the Radical Software Group (http://www.rhizome.org/carnivore) would be perfect examples of this process. In these cases, artists set certain parameters through software or a server and invite other artists to create "clients," which in and of themselves again constitute art works. The initiating artist starts to play a role similar to that of a curator, and these collaborations are often the result of extensive previous discussions (sometimes on mailing lists specifically established for this purpose). Showing these types of work within a museum context may lead to yet another level of curatorial "intervention." Collaboration is inherent to the networked digital medium and an important element in multi-user environments (for example, 3D worlds that rely on their inhabitants to extend the world and create dwellings) and gaming.

Obviously, many new media projects are ultimately created by audience input. While the artists still maintain a certain (and often substantial) control over the visual display, net art projects such as Mark Napier's *P-Soup* (http://www.potatoland.org/p-soup) (Fig. 3), Andy Deck's *Open Studio* (http://draw.artcontext.net) or Martin Wattenberg's and Marek Walczak's *Apartment* (http://www.turbulence.org/Works/apartment) would all consist of a blank screen if it weren't for audience participation.

When it comes to involvement in the curatorial process, however, the audience still is a neglected element in the equation. With its inherent flexibility and possibilities for customization, the digital medium potentially also allows for an involvement of the audience in the curatorial process. The idea of "public curation" currently still is in the experimental stages but there seems to be a growing number of efforts to develop models for this form of collaboration where the audience gives input through web sites or in the gallery space. "Public curation" blurs the boundaries between public and curator, allowing for models that potentially could establish a more direct reflection of the demands, tastes, and approaches of an audience. The reconfiguration of the roles of curator, artist, audience and museum that is brought about by new media will certainly meet some resistance and might not live up to its potential for quite some time. Ultimately, this reconfiguration is a reflection and microcosm of the potential of digital technologies themselves -- an open-source model of the creation and presentation of art.

3. *Preserving Process*

The inherent nature of new media projects and the collaborative processes employed in their creation, curation, and presentation make it obvious that -- in order to write a history of new media and preserve the art itself -- it will be necessary to develop new models and criteria for documenting and preserving process and instability.

Essentially, there are three basic methods of preserving new media art. The most inelegant and impractical one is to collect software and hardware, which would easily turn any art institution into a "computer museum." Another strategy are emulators, computer programs that "recreate" the conditions of hardware, software, or operating systems, so that the original code can still run on a contemporary computer. yet another approach is "migration" -- an upgrade to the next version of hardware / software. The latter may work well for some projects and turn out to be problematic for others, which might still look "dated" in their recreation: if the latest technology had been available to the artists at the time of the work's creation, they might have done a different project in the first place.

In the spring of 2004, the Guggenheim Museum in New York presented a groundbreaking exhibition called *Seeing Double -- Emulation in Theory and Practice*, which paired new media artworks (as well as others created in now endangered media) with their re-created doubles -- a version of the original upgraded to a newer medium or platform. (Fig. 4) The term emulation was interpreted in a broader sense since some of the works were technically migrations, for example an upgrade to a higher platform (a faster computer and higher screen resolution), where the artist had to "slow down" the speed at which the program originally was running. The exhibition, supported by the Daniel Langlois Foundation for Art, Science, and Technology, gave its audience a unique opportunity to compare an original to its recreated version, and detailed documentation about the show is available at the accompanying web site. (http://www.variablemedia.net/e/seeingdouble/home.html)

Both in Europe and the US, numerous preservation initiatives that strive to create standards for the preservation of media works are in development. Among them are the Variable Media Network, (http://www.variablemedia.net / http://www.bampfa.berkeley.edu/ciao/avant_garde.html) and INCCA, International Network for the Preservation of Contemporary Art. (http://www.incca.org) Main issues that have to be addressed by these initiatives include the development of vocabulary for catalog records, standards that allow the interoperability of the metadata gathered by institutions; and tools (such as database systems) for the cataloguing of "unstable" and process oriented art.

Among the latter is the Guggenheim's "Variable Media Questionnaire", an interactive questionnaire that enables artists and museum and media consultants to identify artist-approved strategies for preserving artwork and define the "behaviors" of artworks in a media-independent way. Given the speed at which digital technology is developing and in turn becoming obsolete, one might expect that the preservation efforts in this field will increase in the near future.

There always have been and will be art objects that can rely on an established cultural "system" of presentation and preservation (museums, galleries, collectors, conservators) and new media art does not threaten to supersede these objects. However, if new media art

will find its place in the art world through a support system that accommodates its needs, it will expand the notion of what art is and can be. Picking up where conceptual art and other "movements" that reconsidered concepts of the art object left off, new media art has the potential to broaden our understanding of artistic practice.

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