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POCOS: Preserving Software Art

Glasgow, 11th–12th Oct 2011

About the event

JISC is funding Portsmouth University and partners to host a series of seminars and reports on the preservation of 'complex objects'. This 'POCOS' project has already hosted an event on visualisation and simulation, and the second meeting, on the preservation of software art took place in Glasgow between 11th and 12th October. A final symposium is to be arranged on the preservation of gaming environments which will be held in Cardiff in the middle of February. For more information about the POCOS project see: http://www.pocos.org/

WK represented the DPC and various DPC members were present in their own right – Janet Delve, David Anderson, Milena Dobreva and Leo Konstantelos (Portsmouth), Neil Grindley (JISC), Laura Molloy, Ann Gow, Perla Innocenti and Delaina Sepko (HATII).

These notes are intended to provide an informal briefing for members of the DPC not able to attend the event. For an authoritative and comprehensive repost readers are encouraged to contact the organisers of the event and the speaker directly.

Presentations and discussion

Mark O'Neill – Introduction

The City of Glasgow has undertaken an enormous regeneration project based on cultural heritage . 18millionpounds on storage of their collections alone with 16million pounds of that being direct city funding. The city now offers unprecedented access to collections, massive investment in performance spaces. And all the time this is the poorest city in Europe suffering an extended industrial collapse: the most rapid industrial expansion and the most dramatic industrial collapse. Transformation of the city has been based partly on investment in the cultural sector based with deliberate and evolving alliances around cultural and creative industries between public and private, institutions, with emphasis on skills and production, and a deliberate effort to keep people and skills in the city to create viable creative centres. Local participation in culture has increased by 45% since 1989. Assessing audience and understanding needs are critical to success.

Richard Rinehart (Samek Gallery, Bucknell University) – Artworks as Variable Machines

The computer is the universal machine: what the computer does is more important than what it's made from. Variability is a defining characteristic of the computer. New media art is characterised by its performance and deployment rather than what it is made from. It is more like music in this sense – which can be performed on any number of instruments. Internet art is expected to be viewed on any number of device and browser and screen, with different latencies of performance and thus variation. It's not purely conceptual because it is real: but it is variable. It also has an intellectual form. Walter Benjamin contended in the 1930s that original has an aura that can be

reached only through direct access to the work – and thus reproductions are of a different order. Reproductions are not 'bad' – they just have a different order. In this sense, digital art is always a reproduction and is designed for 'reproducibilty': to ask for the original bits makes no sense. Art history and criticism have the concepts of 'presence' and 'presentness'. Simply expressed, presence is expressed in real mundane time and is contingent on points of view: presentness absorbs the user completely and becomes the present. These concepts are useful to discuss new media art: contingence and time that relate in a real way to the world through performance of some kind. Media artworks are algorithms working on real world phenomena. It is not self-contained. But museums still assert the need to preserve and fix art, thus inhibiting and variability. Do we really want to maintain the original machines and disks? Do we really want to fix that which is in principle variable. What date is a work of art now that needs to be installed? What is authentic? Examples of installation art show that variability has been admitted into the institution and the institution has not fallen down. In fact museums have tended to be risk takers in the front of house but they have not been risk taking behind the scenes – indeed the very opposite. Formalised preservation strategies that embed and make routine variability and creativity can be established. The trick is to prevent the integrity of a work from disintegrating without preventing adaptation and variability. How much variation is permissible without losing integrity? The answer is to ask. The current practice is to assume no variability and to attempt fixity: it's on the far edge of the ecological spectrum. Preservation needs to adapt therefore because it is implicit in the artwork, and is required by the intellectual formation of the work. The museum and gallery collection managers need to embrace the variability of the work.

'John Cocteau was asked what he would save first if his house caught fire. 'The fire', Cocteau answered.'

Discussion:

- Inventory and market value are drivers to the finding of the original. What are the implications for the market value of digital media art? So we are probably looking for value in the wrong place if it is only to be gained through the aura of an original.
- Copyright is a real problem because works often include diverse sources of material and it's very hard to identify who owns what, of how the IPR adheres to documentation and ideas around the work.
- If value is hard to establish and always distributed in variable places, why should any institution invest in software art?

Vicky Isley and Paul Smith (Bournemouth University / Boredom Research) – Best Before

Software is a really flexible and interesting way to respond to the world and therefore appeals to artist very strongly. There are several good examples of new media art which also enables distinctive or unique performances. But the underlying technology changes really rapidly and this means that artists are required to think about preservation and obsolescence much more quickly than in other collections. For example, one project required optimisation to squeeze every ounce or responsiveness out of a processor: moved to a new processor after a short period the result is a comical representation that bears little or connection to the original intent. So the work needs a

time signature to know how to play it. As artists we simply didn't consider the implications of the rapid shift in technology. Another example required a 6 month frame of reference to develop and unfold between the user and an embedded piece of software which in turn was in touch with a server. But the web address was closed down because of legal wrangling – completely out of the control of the artist. All the addresses were hard-coded into the software so the fact that the web server was meant the project was stopped abruptly because of someone else's legal dispute over a domain name. A similar problem exists for works that are entirely based on macromedia products and thus could be pulled without any control from the artist. Open source makes a lot more possible though the instance issues remain and works need constant gardening and there are bugs which are introduced but which need to be paid for. Now using java-based programming which means they are less dependent on the proprietary software. There are real problems of long term and ongoing maintenance though, such as the maintenance of an art work called 'snail mail' which depends on live snails and which unfolds over a very long time. In some cases they have lodged the source code with collectors, handing it over and letting another party manage the work in the long run. Handing over a work to an owner means the artist needs to hand over as much information as possible so that it can be maintained – source code and documentation. The procedures for that kind of accession are only poorly understood by collecting institutions. Identifying what is important in the work is good practice.

Break Out Group 1 – Role of the artist and ensuring integrity

There is a need to define the integrity of the work via some kind of documentation. This documentation will vary depending on the work and there is unlikely to be a single model for this. Documentation is in part a subjective and creative process itself – and there are different drivers such as the requirements of funders, to facilitate collaboration with others, to create a CV. Documentation for preservation seems less important and has only weak drivers. Documentation of objects in an art work is only one part of the definition of the work: instructions for reconstruction; narrative of intent, physical requirements, priorities, authoritative context, rights and permissions, ongoing interpretation and so forth may also need to be described and documented to ensure the integrity of the work. Documenting for audiences and for curators may vary and there is a distinction between variability of form and/or function.

There are three different sets of rights and three different sets of expertise: creators, curators and audiences. There is a need for these three sets of rights and expertise to work together as there objects are likely to degrade quickly and without warning.

Break Out Group 2 – File formats, storage and virtualisation

With software art, the relationship with the real world is essential and complex and preserving this relationship is the biggest single preservation challenge. The artist should be involved more immediately in the process of preservation as opposed to the more traditional approach. Recreation requires documentation. Emulation typically requires less documentation and delivers a more authentic performance. Planning for emulation helps provenance and it complements the preservation of physical objects, though it does not substitute for it. Tools that create files are likely to be more important than the file formats themselves: digital tools often constrain creativity as

they are tailored for other uses so it's important to document these. Where possible, it's preferable to document formats in a standard way with details, and to document the physical properties. File formats that are expected to last should be preferred.

Break Out Group 3 – the role of the cultural institution, documentation, metadata and interpretation

The nature of the artwork changes in not just in a digital / preservation sense, but also a development through audiences and interpretation. There are a whole range of institutions collecting and audiences making interpretative comment on works. The trick is to provide a skeleton or a basic level of documentation which will make an authoritative presentation available at points in the future. In this sense new media art is like really good jazz, and each time it is created it is created in a new form for a new audience.

Break Out Group 4 – Ethics of preservation

Group set up to consider whether there was an ethical framework. Complex objects create a complex framework for ethics. Core to the ethics are about taking actions to prevent harm, or do as little harm as possible. If an object has been accepted into a collection then the ethics of the institution needs to be brought into frame. Key considerations – the ethical considerations go back to the start – so we need to not make promises we can't keep. Relativities of harm – solutions for preservation must not be configured around the minimal harm. The result is that what is needed a clear statement of ethics, which in turn needs to inform a DP strategy which in turn informs a preservation plan. Decisions have to be transparent, the right people make the decisions, that they gave some kind of recognised and independent integrity. Ethics start at the beginning – so preservation plans should be informed by the creation and commissioning process.

Michael Takeo Magruder (King's College London) – Between Code and Space: the challenges of preserving complex digital creativity in contemporary arts practice

Key issue is defining what constitutes the artwork – and if we can identify more accurately the artwork then we can begin a more meaningful conversation about what (and how to) preserve. For example it's hard to define the boundaries of a work that is based on real time data – a combination of software, modelling and data sources which are interpreted together. Examples include images lifted from Flickr to become textures or live data streams from the financial markets which update minute by minute. A second area of concern is those media art installations which require a physical manifestations, or which are physical manifest tations of algorithms. An example of the latter might be a pdf output from a series of images manipulated together. The implication is obvious – preserving software based art means preserving things which are not software. Concepts, processes and outputs contribute to the creation and appreciation of an artwork and there are reasons why you might like to preserve each of these in different ways.

Perla Innocenti (Glasgow University) – Bridging the gap: interdisciplinary reflections and potential collaborations for preserving computer-based artworks

In agreement with the previous speaker, this question of preservation is one of definitions. Preservation of art is fundamentally an Art questions. Digital art is in some senses a performance and questions of preservation need to be addressed by analogy with performance. Seamus Ross has argued that Subsequent instantiation need to tend towards the initial instantiation, and they do that by sharing a precise resemblance of content, function and behaviour and thus can claim authenticity and integrity. The degree of sameness will vary over time. Thinking about preservation as active risk management, there is a strong basis for risk management in traditional object conservation. Significance, risk as loss of value and technical obsolescence can be assessed to some extent and Patricia Falcao has presented some work on this topic as implemented by Tate, and a more generic approach from DRAMBORA allows organisations to define their own risk profile.

Michael Fourman (Edinburgh University) – Keeping everything digital

Collaboration is key to a lot of informatics and that's evident today. We take for granted that IT allows convergence between forms and formats that historically were distinctive and were almost impossible or massively expensive to duplicate. IP is like magic! Information networks are not like power networks and the salient difference will become clear – but it provides a useful framework. There are a lot of applications, protocols and services at the software level and there is physical infrastructure underpinning this. These two layers are held together by IP. Ambitions to aim for are symmetric, low latency and highspeed and mobility. There is a logarithmic scale of growth and Scotland – or any country - needs to keep pace with the world in order to keep pace with the economy. How much optical fibre does Scotland actually have? In reality we need about 2500Km of fibre and around £100m of capital investment. This is technologically not very hard and it's not even an awful lot of money. But it means we need to understand more about the economics of the Internet – small co-operatives of artists may be excluded from the large infrastructure by large creative content providers. The symmetrical provision of services between peers is simple – but as the internet has become more complicated so the provision of transit services has both grown and become more complicated: it means that money needs to change hands between service providers to provide access to infrastructure. Confidential commercial arrangements make it hard to understand exactly what is going on. Tier one telecoms companies take money from consumers through their agreements with local tier one and tier two providers. BUT provision of services becomes more complicated when you add a content provider in to the mix. Netflix video services for example used tier two service providers who wanted to make more money for the cost of delivery services. The balance of services and payments means that wherever a provider can block access to a large volume of customer, then they can block or degrade delivery of content and thus strangle content provision. The business and economics of the internet are important to the successful delivery of a viable creative sector. An open infrastructure is required for a properly flourishing creative sector: the physical infrastructure is simple but the economics of the infrastructure are really complicated. Attention to these economics is therefore essential to the developing of the cultural sector.

Break out Group 1 – Strategies for preserving digital art

Knowledge transfer between different fields is important and there's a need in particular to make it possible for artists to engage more effectively with the conservation and curatorial community. So

the question arises as to how to sustain the dialogue and communications from today. People need to be able and willing to open up the dialogue and there need to be for a where such a dialogue can take place. Artists seem to have ended up with a lot of responsibilities in much of the dialogue but they have only weak incentives and limited knowledge to support their work. Funding for creating work needs to include some basic funding for preservation actions. Commissioning works creates a degree of knowledge. There will be a gap between things that were created in the past before any such strategy existed and things created with a strategy in mind.

Breakout Group 2 – Strategies for preserving digital art

There is a strong need for knowledge transfer between artists and collecting institutions. Once an agreement has been made and signed off, the artist must be able to disavow an artwork and a custodial statement from the institution which identifies any actions they have undertaken. There's room for a debate about the role of the public in conservation versus the expertise of a specialist curator – but experience shows that a fan-base can do some amazing things to ensure long term access when properly trained and motivated. There is a need for a standing discussion forum for this topic and ensure not only simple understanding of the issues but also buy in from senior management and sector leaders. We need to establish protocols to enable and deliver a strategy.

Breakout Group 3 – Strategies for preserving digital art

Funding and money need to be examined and therefore also the incentives and business case for preservation. Strategies for preservation can be imagined as a workflow from the point of commissioning through creation to acquisition by a collecting institution. Typically there are multiple views onto this, but it's for the collecting institutions that the problem is most obvious. These processes almost already exist: the difference is in terms of expertise and in the value chain. The value is not clear when an object is so readily replicated; variability is not a problem in a sense so there is an increased need to document; display and exhibition requirements are different

Simon Biggs (Edinburgh College of Art) – make or break: concerning the value of redundancy

There is a contradiction at the heart of digital art making regarding its temporal mediality and its relationship with a mainstream visual arts practice that values permanence. Why do we wish to preserve something temporal and fleeting? Will the preservation of digital works contribute to a process of commoditisation that many media artists have sought to avoid by embracing the ephemeral nature of digital media? Are there reasons that would justify preserving digital works of art when, for some artists, redundancy is a key principle of their practice? Art is traditionally valued for its technical and physical state – though modern artists from Dada onwards have sought to challenge this traditional approach to the value of art. Artists like Robert Smithson, Andrew Pike and others have created artworks that cannot be owned or transferred and therefore cannot be valued in the same way. Conceptual works are not based on materials for example and they generally adopt the abject or quotidian over the rare or expensive or rare. Materials that are unstable or unfit are selected precisely for the challenge they give to the traditional values of art and the art market which is deliberately subverted. Traditional values are continually re-stated however and there is a tension here – so Warhol's works are collected at great value. Software art remains on the fringe of

the art market and thus of the art more generally precisely because it is hard to establish and articulate value in a way which collectors and investors understand. In fact the ICA has closed its Live and Media Arts department and there is a sense among some art practitioners that new media art 'lacks depth and cultural urgency'. As a result, very few new media artworks are held by collecting institutions and very few will be collected precisely because collections are hard to maintain. Does it matter whether these collections are lost? Perhaps not – but whatever else, it is more likely to be the work of digital archaeologists to understand and exhibit art than curators or conservators. In fact vast amounts of the digital art of the earlier generations have already been lost. Media artists create their own media and this marks them out from other types of artists. There is a growing division between reading and writing in computing: the tablet or the mobile phone is not really a writing machine insofar as it is able to programme the machine in the way that it is possible to programme on a computer. Ironically therefore the capacity to write is diminishing as the capacity to access processors is increasing. In this sense the means of production are being removed from the mass market as the public buys more and more devices. In a very direct sense, the ability to read and write is critical to artistic creativity. Digital literacy is not the ability to use a computer – it is the ability to rewrite the computer. Smart devices are in this sense a threat to abstract and remove literacy and to confirm people solely as the consumers of other people's cultural expectations. This is why digital artists have tended to emphasise the role of art as something you do rather than something you create.

Neil Grindley (JISC) – what is the funding landscape for this sort of research and development?

Discussions about software art and their preservation are of interest to JIC but it's at the boundaries of the sorts of thing that interest JISC which is more normally associated with networking for higher education, research data and scholarship. Preservation is a core issue for many organisations and there is an active development group across many institutions. POCOS is concerned with complex objects and software art fits into a wider programme of research into simulation and visualisation and computer games which feed directly into core focus for JISC. So by exploring these themes we are exploring an avant garde and there is a reasonably chance that the material will be of wider relevance. Relationships between people – keeper / creator/consumer – are the key to success of any policy or strategy for digital preservation. There are very many people in many other disciplines that can contribute and can learn from the developments here. Typically a small amount of money can have a very good impact. JISC has sent out an invitation for projects to enhance the sustainability of digital collections and projects of around £50k are available.

About this document

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