

## **Overview of seminar findings for the e-science scoping studying in the visual arts**

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### **Summary of our remit was to:**

1. *Encourage* and stimulate an ongoing debate on innovative and creative use of ICT within research in the visual arts; to help identify what/where the new technological challenges are coming from.
2. *Raise* the awareness and understanding of e-science to enable scholars in the visual arts to engage with ICT within their research practice, and to discover more about and take advantage of the outputs and tools arising from the e-science and e-social science programmes.
3. *Set an agenda* from this expert seminar, of how we want to engage with high end use of new technologies within our discipline, to help to assist the AHRC in the development of an arts e-research/science agenda.

### **Challenges and Barriers for the uptake of e-science in the visual arts**

Research in the Creative Arts is a broad and dynamic field. It provides modes of inquiry, reflection and production through visual thinking and making. Knowledge and reflection are embodied in, rather than applied to, artistic practices and processes. These may materialise through a variety of media and forms of presentation, including two dimensional, three dimensional, time based and interactive media, and site specific practices, as well as multi, interdisciplinary and traditional text based research approaches.

In the visual arts there are a number of artists who still want to engage in the physical and not the virtual world. It is therefore going to be much harder to try and persuade them that new technologies are going to be useful, or to establish new paradigms of works outside of these established frameworks.

There are also things that are emerging from these technologies which cannot be categorised through established classifying methods. We talk about new modes of conception- art is conceptual, both in terms of the experience of the making, and in terms of experiencing somebody else's understanding and appreciation of it.

So therefore ICT in the visual arts could be seen as a challenge because it opens up new opportunities, but it can also be seen as a barrier because there is a need to open up a new dialogue and vocabulary to describe these forms of creativity.

There is also a specific difference between doing research in the visual arts and that of using technology as a tool and then using it as a method of creating work.

In comparison, science based research - which goes through certain stages or life cycles - is easy to identify and easy to articulate. However, the research done in the visual arts is often difficult to define and map out diagrammatically. We have problems with articulation, particularly articulating the work itself, and its actual outputs. We often mistake the method used for its production for its creativity. This is the challenge and dilemma that faces the visual arts. We certainly need to make this clearer to people who fund the projects, but don't necessarily understand the subject.

We need to look at setting up multi-disciplinary research centres and working with people inside and outside academia, who can pull things together and give people new opportunities for using high end technologies. The downside is that there is that is always going to be some form of accountability, through either our teaching commitments, the research we do and it's outcomes, and the RAE. Often the infrastructure lags behind because it's quite conservative and the review panels are often composed of very traditional thinkers.

Artists in the pre-accountancy age were closeted in art schools in various ways, which was an indirect form of Government patronage of the arts. But for all its flaws it produced as much good art as science. This patronage has now collapsed and, in its place, there is a much more standardisation of funding, which often converges around the concept of technology meeting e-technology. These are the things that we should be dealing with: these forms of technology and these forms of patronage, and ways of operating as artists and resisting the temptation to make this conform to scientific modality which, in some areas, has recognised the limits of its own methodology and is looking elsewhere.

We have established that there are a lot of areas where there are roles for technology within the practice and disciplines of the visual arts. However we need to identify new roles for technology for future engagement and applications, which will then help us identify new research funding and partnership opportunities.

Perhaps there are too many rules/standards currently applied to current technology applications and protocols. We could look at setting up our own new social-media environments and let the rule sets evolve through community type self-regulation, to set future networking strategies.

These are challenges because we need engage with work outside the traditional academy. For example there are now direct access links to artists through personal 'blogs'. This allows a direct interactive engagement with the creator of the artwork, rather than just the artefact. Using this technology breaks down the bigger picture, the notion that all things can be shared. This is demonstrated also by the growing use of 'Open Source' software, enabling the sharing of computer applications and expertise.

We are increasingly working with a generation of students with different attitudes and mindsets to new technologies. We have to re-evaluate the whole nature of the relationship of academics to students; in the way they think and in the work they are producing. Their laptops are now an empowering tool. They are able to do things that would have been impossible ten years ago, and are increasing opportunities and possibilities for new creativity and interconnectivity.

The world of music should be our exemplar, as it has naturally evolved into the digital age. Musicians are creating work from their laptops and online, recording and editing within their own personal environments, then releasing and publishing their works on the Internet. The same thing is beginning to happen within the art

world- for example through 'MySpace' and 'YouTube', where artists can display and show work to their peers.

Another issue is that a lot of the cutting edge interactive installation work is often ephemeral. This raises several questions, such as, does it still exist? Has it been recorded or archived? Another challenge for artists is how to deal with an immaterial 21<sup>st</sup> century.

In the electronic age, never before has ideology, representation, and perception, so converged. Consequently, instead of the perception being about how we *see* and *view* the world, it has now shifted to how one is *accountable* in the world. Once it is conceived that the perception is now about *accountability* and not about the experience, there is growing awareness that (overwhelmingly) the digital technology agenda can be seen as being answerability all pervading, and all embracing.

## Part 2

### **What does e-Science means for us as visual artists?**

What do we need to do to become involved in e-Science?

The key issue is access, so although there are now a number of UK HE institutions that have invested in grid technology resources, we know little about them or how they are being used. For example on a general level, very few places in the UK in HE are using beyond 10% of their bandwidth capacity. So if this is an accessibility problem, we need to make the contacts to make things happen. There need to be opportunities to engage in an ongoing dialogue between the technical and IT departments, to encourage the best use of these new technologies with artists/academics. There are best practice models within the USA using Internet 2, where a dedicated team would work with enthusiastic individuals who wanted to access this resource.

Finance is always going to be an issue, although there are plenty of things that are already integrated into our existing basic computer systems, which work in a similar way to high-end grid technologies, which could be used..

We are however locked into one way of working, and we really need to move beyond our existing structures and to set the agenda and define what we are actually are aiming to achieve with these new technologies and at what level.

There are great opportunities available to us with the use of these new technologies. We could also collaborate with other interested partners already in place such as MARCEL

*'An umbrella organisation of like-minded artists, scientists and institutions interested in exchange and collaboration operating over a permanent very high bandwidth interactive network dedicated to artistic, educational and cultural experimentation, exchange between art and science and collaboration between art and industry'. [www.mmmarcel.org](http://www.mmmarcel.org).*

There are other such exemplars of artists, particularly in the United States who are working with the Internet2 and doing quite a lot of planned, collaborative music and mediated performance activities.

We need to identify and define what the potentials there are for the use of such high-end technologies, which would enable us to do things that we never had the opportunities to do before. We should identify a particular project that we can explore and use as a case study. Or, we could use a community already in place like MARCEL, to build projects around this network. We will however need to set up parameters, similar to other research methodologies, which could then define the aims and outcomes of the research.

However not every artist wishes to engage in a global community agenda. It is fairly rarefied and it is something that has only manifested recently through the new digital environment. Artists are willing to engage with technology, but it's a specific, specialised type of technology, so it needs to be able to fit within our artistic practice and research remit.

What we bring as artists is creativity, innovation, imagination. We want to imagine the access grid, to engage with it, to sit with creative computer scientists and use it as an artistic space and see what emerges at the end. A research project could for example - through the use these technologies - lead to a re-conceptualisation of e-science and the grid's future potential.

We need to develop the opportunity for experimental software to develop artistic outputs created by the use of generic bespoke tools and applications tools. At present the problem with the tools is they are not very intuitive or manageable.

It could also be a research project about how people engage collaboratively. The EPSRC are interested, and concerned, that their money goes into creative science, although creative computer science lags behind. We should start to push the barriers and produce something new through this cooperation. The partnership between artists' and scientists' needs to be done for everybody's benefit.

There are a lot of academics/artists who would like to engage with other people, to find out what's going on, and set up network opportunities. For example we could set up access grids not just as a conferencing facility, but also as an informal open artists studio/café bar - where people dropped in and saw what artists were creating, and were able to view and find out about ongoing artistic processes as they evolve. There would be opportunities for people to critique the work, to discuss the process of how it was made, how the artists collaborated on it, and how things had developed creatively. For example imagine a three-dimensional object that one could explore, and that other people had access to and could view from multiple vantage points and multiple locations.

To further lead to the setting up of archival curatorial places, where there is an engagement with the artist, the research practitioner, and the technologist, allowing the artistic creation to be captured and archived and presented as part of ongoing process of research.

Curation in the digital environment is relatively new. However, we need to identify the potential for this, to help provide future viewers or interactors with this archival material, and the right resources to engage with it. It also shifts the whole nature of how we record things, who would want to use these archives, and how they would be able to extract the relevant information and what tools/ applications would be needed to enable this to happen.

The data grid and the computational grid provide access to large data and the means to analyse it. That doesn't necessarily just mean access to high-resolution images, but opportunities to use multiple images. This extra computing power would allow people to explore images from all over the globe in much more efficient ways, without the need for the pre-processing or re-rendering of the images.

There is a space in this for development work outside the screen and the key board environment – these could include devices, such as mobile technologies, mixed reality, haptic devices, light beams, captive devices- gloves, pads, light beams or different sort of hardware where people log on, leave something, share and comment upon work in progress. It could be a virtual salon where participants' experience is transformed by innovative projections, such as interactive tables allowing co-operation as a group in an easy to use networked environment.

**In conclusion:**

At the end of the seminar it was agreed by all the participants that the potential of the grid in the visual arts should be about art, not just about the use of the technology. It should be about using e-science as a resource for the use of creative exchanges, to create and enable a new collaborative art practice for the 21st century.

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