

## **What are the ICT needs of practice-based researchers in the visual and performing arts?**

**Chairs: Celia Duffy and Sandra Kemp**

### **1. Summary of key themes**

The ICT experts group:

1. Agreed that there are two levels of ICT support that should be addressed: the background, general toolset of ICT and the highly specialised needs of individual practitioners.
2. Noted that ICT can provide artists with entirely new ways of working and thinking, and agreed that the term 'ICT' can be interpreted in a misleadingly narrow way.
3. Agreed that interactivity and the use of ICT as a generative tool were both central to the way in which artists can use technology.
4. Noted problems of infrastructure, and agreed that the role of 'technician' needed reassessment.
5. Discussed ways in which greater collaboration across disciplines might be achieved.
6. Reviewed some AHRB processes and procedures.
7. Suggested actions for the AHRB ICT programme.

### **2. Contents of this report**

We have drawn out major themes from the detailed minutes taken at the meeting, rather than presenting a verbatim report. These themes are presented in section 4, after a summary of the opening remarks from David Robey and Celia Duffy. Section 5 summarizes recommendations and possible actions for the AHRB.

The format of the meeting was as follows:

- Introductions and scene setting
- Small group discussions; the group divided into two (made up of visual arts and performing arts) and considered questions outlined below
- Reports back from each group to the whole group
- Plenary discussion and framing of recommendations.

### **3. Scene setting and questions for consideration**

After welcomes and introductions, David Robey outlined the aims of the new AHRB ICT Programme and the role of the expert seminars in helping to shape its direction. Celia Duffy then made some opening remarks on ICT in the creative and performing arts and introduced questions for consideration.

#### **4.1 Aims of the ICT programme**

The ICT programme has a strategic role: to help AHRB to develop a strong and fully articulated long term ICT research strategy. The series of expert seminars will feed into the strategy. A review is planned for 2006 (including AHDS).

Work so far: £1m set aside for the ICT Methods Network with decisions due at beginning of June. The Methods Network will involve pooling/disseminating ideas for advanced users and interdisciplinary exchange across disciplines.

JISC funding has been secured for ICT arts and humanities training and awareness programme for lower level users. This will produce a suite of online resources for training across the AHRB disciplines. Closing date for proposals is June.

£1m is left to spend on projects to promote, develop, build capacity and transferability. These are not academic research projects, but will help AHRB panels assess projects with an ICT element. A positive outcome of the expert seminar will be to come up with broad headings for spending this money.

The ICT programme will focus spending on areas of broad useability with emphasis on interdisciplinary, collaborative, common elements. The training element also relates to postgraduate research training.

#### **4.2 ICT in the creative and performing arts**

Celia Duffy made a statement contextualising the use of ICT in practice-based, or creative research and then set out the aims, objectives and methods for the day's discussions.

She referred to a distinction between research *into* (historical, critical) and research *through* creative work, where research questions are addressed and worked through in the creative output and the differences of approach in their use of ICT. For example, those using tools for searching corpora of notated music are essentially facing same sorts of issues as those for searching textual or linguistic corpora. However, a tool for a creative practice-based researcher could be anything from radio frequency tracking devices to rapid prototyping to software for achieving particular sorts of glazes on ceramics – there is a huge diversity.

Willard McCarty and Harold Short recently attempted to map the intellectual territory of humanities computing. They were able to identify what they referred to as the “methodological commons” – e.g. methods and concerns that many strands of humanities computing have in common. The ICT scheme assumes there's such a thing as humanities computing – in fact it acknowledges and celebrates that and shows that humanities computing has come of age – but the status of the arts in this is less certain. There are wide methodological and conceptual differences between computing concerns of text-based or tabular alpha-numeric disciplines (almost all of AHRB's subject areas ) and visual and performing arts.

Celia Duffy referred to collaborative work between artists and scientists at the Loughborough Creativity and Cognition Centre (funded by the EPSRC) and Professor Richard Beacham's statement referring to both 'thinking with things' and computer games. Finally, she thanked Professors Joan Ashworth and Barry Smith for their prepared papers. Joan Ashworth referred to her concern about re-use of software and access to expertise; Barry Smith referred particularly to collaborations.

#### **4.3 Questions for discussion**

The following questions were posed to steer discussion.

1. What do the practice-based community use ICT for?
2. Is there a clear division between the concerns of humanities computing (broadly, a combination of ICT-based analytical tools and resource provision) and use of ICT for creative means?
3. How much do researchers re-use ICT products created for other purposes?
4. What kinds of tools do users need which may or may not currently exist?
5. How can the AHRB support the diversity of ICT applications for creative research?
6. What are the new modes of collaboration that are needed between researchers, technical developers, other disciplines?
7. What kinds of training do they need?
8. What is the effect of technology on the creative research process?

#### **4. Summary of the day's discussion**

##### ***5.1 Trying to handle both specialist and generalist needs***

Two different levels of ICT were identified: the background, general toolset of ICT and the specific needs of particular researchers in the creative or performing arts which are often highly specialised (e.g. in the case of music composition software) or adapted from other uses.

The notion of re-use of software, but perhaps more specifically of data, within an artistic milieu was identified as problematic: in the practice-based research we are not often working with analysis of data.

The group agreed that we need, on the one hand, general and generic tools to ensure that creative arts researchers are up to speed with those of other arts and humanities disciplines and, on the other hand, a huge and often obscure range of specialized software, for example spatialisation, VR and motion sensing tools. Often these tools can be adapted from other fields, for example, games and put to novel uses.

The group suggested that the AHRB could assist in providing artist/researchers with tools (databases etc) for locating such software tools.

##### ***5.2 The role of ICT in creative research process and the problem of the narrowness of the term 'ICT'***

A further distinction was drawn between the use of ICT by artist/researchers *per se* as compared with artist/researchers working within a digital medium.

Professor Richard Beacham mentioned in his statement to another expert seminar the notion of 'Thinking with things, not only with words'. Our community is likely to explore

how ICT can lead to new ways of thinking, new ideas, new practices that would not be achievable outwith the digital medium.

The group agreed that the term ICT implies a narrow view of the technology that emphasises its use as a tool – ‘Artists used to use pencils and now they use computers’. This does not take into consideration the wider role of technology – allowing new processes, and therefore outcomes, to develop; permitting failure and experimentation; facilitating new practice born in digital media; generating new kinds of artistic work.

Information and Communication are only a part of the artistic use of technology – consider artificial intelligence (AI), robotics etc. The group agreed that a wider understanding of ‘information’ should be conveyed to colleagues at the AHRB.

### **5.3 Interactivity**

This wider understanding of the term ‘ICT’ reflects the wider uses to which artist/researchers can put technology. The group noted the difference between archival and generative tools.

Producing a trail or trace of the artistic process using ICT might overcome the conflict between documentation and creation, that is, ‘capturing’ (or rather representing) the process without interfering with it. (The group also noted that there are dangers of archiving to the artist: revealing things that are not intended to be revealed in a final product; producing poor surrogates of the original, the status (if any) of ‘official knowledge’.)

There were questions posed on the position of archiving: isn’t it closer to the humanities side of our disciplines? Aren’t artist/researchers more interested in generative, and more specialised uses of ICT? ICT for the artist/researcher should aid the research process rather than contribute to the general pool of knowledge (although archiving can be a common denominator between practices and disciplines).

The group agreed that it is crucial to consider creative uses of ICT, such as interactivity. Artist/researchers are constantly looking for opportunities afforded by ICT, but not necessarily data: alternatives, things unexpected. They want to and can respond to suggestions from the system.

The group noted that in the creative use of ICT, interfaces are central: artist/researchers working both with and against them. Interface is a huge area that is largely unexplored; visual artists, for example, often work through physicality, through touch, through feeling. MPEG7 is exploring different interface modes, particularly non-text searching.

The group also noted the ‘analogue backlash’ – a considered and conscious rejection of the sterility of the digital.

### **5.4 Infrastructure, including ‘technicians’**

It was agreed that the AHRB might have a role facilitating collaboration between individual artists/researchers and the technicians that often have a major role in creative research processes.

The AHRB needs to be aware of, understand and respond to changing needs, such as the need for new kinds of 'studio' that have the flexibility (in terms of space, ICT resources, time allocation) to allow fruitful interaction between artist/researchers and technicians. We need new kinds of spaces ('playgrounds' in which we can bring different people together), digitally equipped and flexible.

There was some discussion of the role of technical collaborators, research assistants and (traditional) 'technicians'. A tension was noted between the 'artistic' and 'technical' collaborators on projects that involve the creative use of ICT and perhaps a lack of understanding and/or recognition of the vital collaborative role of technical facilitators - individuals who can act as conduit for the realisation of work, perhaps a new role for which more recognition is needed. It would be useful to produce a register of Research Assistants with specific technical skills.

### ***5.5 Collaboration, particularly outside our disciplines***

The group noted that Artist/researchers often have to use existing software and apply it for their own ends. They don't usually have the programming ability to build software from scratch (although there are a few examples, e.g. some composers in the 1980s becoming experts). There are many examples of collaboration between software developers and engineers and artist/researchers.

There is the difficulty of sharing understanding between separate areas e.g. industry (perhaps the games industry) and academe, but there are some good examples:

- of funded schemes to promote understanding of different areas, e.g. EPSRC-funded pairing of artists and cognitive scientists at Loughborough University, or the AHRB's Arts Council of England scheme
- the MIT Medialab white wall, which brings artists and technicians together on daily basis. Arts can pose fascinating problems for technologists.
- An example of early work in digital performance 'Desert storm' at the VR unit in Nottingham. Accomplished VR experts initially knew little about digital performance, but a fruitful research relationship ensued.

These relationships become more effective through time and there are two-way benefits: expertise on both sides increases.

The group noted that, on the down side, our hands are often tied by what we can/cannot do with software. We need links with developers, feedback to developers and wish-lists.

There are problems with how to make these connections – e.g. the predictability of the conference circuit. We always see the same people at discipline-specific conferences, but need instead to be able to make connections outside our disciplines. Perhaps the AHRB could take a role of strategic intervention: do some 'marriage brokering', or look at funding some specific projects, e.g. scoping studies for the e-science agenda, demonstrator projects, projects which specifically broker collaborations with those from different areas.

We might also be able to share adaptations of software. The programme is unlikely to fund applications, but modifications are a possibility.

We need to work in interdisciplinary teams and not expect to be able to do everything ourselves: a good analogy is with car design (which includes areas of expertise as diverse as aerodynamics and the psychology of driving).

### **5.6 AHRB processes and procedures**

The group noted that the current funding infrastructure funds institutions rather than disciplines. In ICT shared facilities for the disciplines would be welcomed.

Non-specialist panels are likely to have particular difficulty in understanding the implications of grant applications that involve advanced ICT.

The group suggested that funders naturally play safe: danger and risk don't pay off for applicants. This could be due to the problem of applicants not articulating their projects sufficiently well, but it could also be due to the 'danger level' of the project. (The group also noted problems with the mechanics and design of the AHRB application forms, e.g. asking practice-based researchers for 'publications'.)

## **6. Recommendations and possible actions for AHRB**

Recommendations for consideration within the programme:

1. **Technology deficits.** There could be a role for AHRB in identifying technology deficits: what existing ICT doesn't allow you to do. Starting from individual projects, build up a more cross-platform picture, taking consideration of end-of-project reports and identifying what doesn't currently work. Tie in specifics of end of award report to methods network to build up a picture of knowledge and skills.
2. **Funding for collaboration.** We need to look at ways of changing the funding model, encouraging and brokering collaborations across funding councils, across technical areas, with industry, splitting awards. (To push the marriage-brokering theme, AHRB could not just act as a dating agency but give a dowry too...)
3. **Technical collaborators.** We need to recognise and value the role of technical collaborators, whether we call them 'research assistants' or 'technicians'. A register of technician experts and a code of practice with regard to these assistants would be useful.
4. **Standards.** We have suffered from major problems in the past due to non-standard formats and transferability (there are significant amounts of electroacoustic music from the 1970s that are virtually impossible to retrieve). AHRB could advocate, fund research into and encourage certain standards of transferability to allow continuity and continued availability of work.

Broader recommendations of the group:

1. **Specialist vs generalist.** Recognise the tension between generic uses of ICT and highly specialised uses for creative research purposes. Promote the generic, whilst facilitating specialised uses. (In the specialist field there is particular work to be done on creative interfaces, beyond text.) We need both and training for both.
2. **Beyond ICT.** We need to think more widely than ICT. Artist/researchers might include e.g. robotics, AI, telematics, VR, neuro-cognition in their toolkits. There are many working with 'born digital' materials. We question the definition, role and status of 'information' (and archiving) in our context.

3. **Infrastructure.** The lack of national or regional centres offering space and/or technical facilities and equipment is significant and the current competitive climate makes their establishment difficult. Splitting funding so that it is shared across universities or across regions and brokering collaborations on this area would pay dividends. Other countries have these sorts of shared facilities (Banff, IRCAM), and such centres would have a great impact on UK and UKResearch plc.