

**Kultur Project**

**Environmental Assessment:  
Research and Projects Review**

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## **1. Introduction**

The Kultur project is creating an institutional repository model for output in the creative and applied arts. Funded as part of JISC's Repositories and Preservation Programme, the project's aim is to investigate a policy and technical framework for establishing a multimedia, multifunctional repository, applicable both to specialist institutions and departments across the sector, and by extension to potential cross-domain users – museums, galleries and performing arts organisations. It is a collaboration between the University of Southampton (Soton), University of the Arts London (UAL), University College for the Creative Arts at Canterbury, Epsom, Farnham, Maidstone and Rochester (UCCA), and the Visual Arts Data Service (VADS, formerly AHDS Visual Arts).

The creative and applied arts are discipline areas in which repository development is so far underdeveloped. There are disproportionately few examples of research from art departments in established institutional repositories (IRs).<sup>1</sup> This state of affairs can be seen as part of a broader imbalance in repository take-up between different disciplines – on the whole, the arts and humanities have a lower level of depositing than medicine and sciences.<sup>2</sup> As well as cultural reasons for this, there are also additional technical problems with the suitability of existing IRs to accommodate multimedia forms and practice-based arts research. While art history, theory and criticism now have a growing repository presence comparable in scale to other humanities subjects,<sup>3</sup> at the time of this review, very few UK HE institutions have any digital representations of visual art in their repositories, and only two have any time-based artworks.<sup>4</sup> While some studies have been carried out which consider different discipline areas and their levels of engagement with IRs, little has been done on the creative arts research culture in particular, as distinct from other arts and humanities subject areas.<sup>5</sup>

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<sup>1</sup> In the UK, Goldsmiths College's IR is an important exception here, <http://eprints.goldsmiths.ac.uk/>. This was set up as part of the SHERPA-LEAP project in 2006.

<sup>2</sup> This is reflected in the configuration of the most established UK IRs. Within the top 20 ranking repositories listed on registries of open access repositories, ROAR and OpenDOAR (ranked according to the amount of records they contain), the Arts and Humanities research deposited accounts tends to constitute somewhere between 2% and 10% of the total records. Some institutions stand out as having higher arts and humanities proportion than this. In the Open University repository, the faculty of arts accounts for 13%, and the school of media at Bournemouth University makes up 17% of the total records in its repository (figures taken January 2008). The registries used to view the repositories according to the total number of records are OpenDOAR (Directory of Open Access Repositories), <http://www.opendoar.org/> and ROAR (Registry of Open Access Repositories), <http://roar.eprints.org>

<sup>3</sup> See for example the Art History department with the Open University's Open Research Online, <http://oro.open.ac.uk/> and [http://oro.open.ac.uk/view/faculty\\_dept/arts-arth.html](http://oro.open.ac.uk/view/faculty_dept/arts-arth.html)

<sup>4</sup> These are Goldsmiths Research Online and Loughborough University Institutional Repository. Although there are only a few art records in Loughborough's IR (23 in November 2007), it is notable and unusual for its combination of printed works with examples of video art.

<sup>5</sup> There are two exceptions that should be noted here, which are both discussed in section 3 of this review. The first is an AHRC-funded scoping study into e-science in the arts and humanities (2005-2006), which considers subject areas within the arts and humanities separately, distinguishing between the research cultures of the visual arts, performing arts, historical studies, archaeology etc. See <http://ahds.ac.uk/e-science/e-science-scoping-study.htm#details>. The other exceptions is Jacqueline Cooke, 'A visual arts

In setting up a repository, the majority of institutions have so far focused their attention on capturing printed research outputs – books, monographs, chapters, articles and conference papers. This text bias is also evident in the literature surrounding repositories. Reports and briefing documents often reference the ‘publication crisis’ when discussing the motivations for and benefits of setting up an IR (eg., Heery and Anderson, 2005). However, funding for current repository projects acknowledges the need to expand the capabilities of existing and new IRs. One of the goals identified in the *Digital Repositories Roadmap*, which has informed JISC’s planning processes, concerns item types:

In addition to achieving the deposit of a significant proportion of scholarly articles, there will be an expansion in the range of content currently being deposited: more commercially-published research papers, working papers, e-theses, learning objects, primary data, video, film, digitized slides and so on. (Heery and Powell, 2006, p.2)

Kultur is one of several new JISC projects intended to expand the scope of digital repositories to encompass a broader range of research materials and outputs.

### **1.1 Purpose of review**

In order to establish some context for the aims of our project, this review summarises a range of sources concerned with the development of repositories and their usage. It is intended to provide the Kultur project team with a greater understanding of recent research in this field, and to identify prominent issues and relevant lessons from previous projects. It will work in conjunction with the institutional and user profiles to pinpoint barriers and incentives for achieving academic buy-in. This knowledge will help the Kultur consortium to determine priorities and workflows for the remainder of the project. As well as the project team, this review should be of wider interest to repository and information management communities, and to future project teams working with similar materials and user communities.

### **1.2 Scope and methodology of review**

The review synthesises findings from three main kinds of sources:

1. Surveys and findings of previous repository projects, with a particular focus on those dealing with non-text material. The review also highlights new projects running under the same strand of the current JISC Repositories and Preservation programme whose objectives overlap with those of Kultur.
2. Digitisation projects. Because there is presently no tradition or framework for institutional repositories in the creative and applied arts, it is also necessary to observe lessons from projects with slightly different aims: the digitisation of visual and multimedia collections, including those undertaken in the museum, art

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perspective on open access institutional repositories’ (Author’s final draft of a paper presented at CHArt conference, 2007), available from <http://eprints.goldsmiths.ac.uk/284>

gallery, and public archive sectors. Although the focus of the Kultur project is on creating a repository for research outputs, rather than special collections or primary research data, the experiences of digitisation projects offer valuable insight into the practical problems surrounding the cataloguing of non-text based material, IPR issues, and useful experience of engaging and targeting specific user groups, including researchers. Consequently, this review also takes into account case studies of digitisation projects, both in the UK and the US, as made available via collection websites, through scoping studies into collections, or in articles published in visual arts journals.

3. Articles, reviews and reports which examine the current status of digital (particularly institutional) repositories. Attention is paid to discussions of existing gaps in provision, and to the analyses of usability issues and the habits of different user groups and research cultures. These include reports produced by the UKOLN and the AHDS, as well as articles published in journals such as *Ariadne*.

## **2. Related Projects**

### **2.1 International Projects and Partnerships**

Since the 1990s, there have been some significant large-scale digital initiatives focusing on cultural objects, which bring together international consortiums. RLG's (Research Libraries Group) Cultural Materials project was started in 1999, and has over 50 members in its alliance including the Getty Research Institute, universities from the US, UK and Ireland, galleries and museums, and national libraries, including those of New Zealand, Switzerland and Australia.<sup>6</sup> The project has integrated cultural collections from these institutions (ranging from art collections and music scores, to manuscripts, maps, and historical documents) into a cross-community database of digital image, audio and video surrogates. The multimedia collection has been available to research institutions for subscription since January 2002.<sup>7</sup>

More recently, a large-scale integrated project funded by the EU has been set up to address the vulnerability of digital information by building a framework to support the preservation lifecycle for cultural, scientific and contemporary art data. CASPAR (Cultural, Artistic and Scientific Preservation, Access and Retrieval) started in 2006, and its consortium consists of 17 institutions and organisations across Europe: alongside IT companies and science and technology centres, the cultural dimension includes HATII (Glasgow), International Centre for Art and New Technology (Czech Republic) and the Institut National de l'Audiovisuel (France).<sup>8</sup> CASPAR's goals are to build a pioneering preservation environment, based on the OAIS Reference, to demonstrate its ability to handle the preservation of the digital resources of many user communities, and to advance the current state of the art in digital preservation (CASPAR, 2006, p.5)

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<sup>6</sup> For a full list of the participants, see the OCLC website,

<http://www.oclc.org/programs/ourwork/past/culturalmaterials/alliance.htm>

<sup>7</sup> <http://www.oclc.org/programs/ourwork/past/culturalmaterials/default.htm> RLG has since joined OCLC (Online Computer Library Centre) (2006)

<sup>8</sup> For a full list of the consortium see <http://www.casparpreserves.eu/caspar-project/the-caspar-consortium>

The Library of Congress in America has also been involved in numerous digitisation projects, and in 2005 initiated the World Digital Library (WDL) project, to make primary materials from cultures around the world freely available on the internet and in multilingual format.<sup>9</sup> WDL builds on the Library of Congress' previous activity for the American Memory Project, which was started in 1990, and now has more than 10 million cultural items in its digital collection. It provides 'free and open access through the Internet to written and spoken words, sound recordings, still and moving images, prints, maps, and sheet music that document the American experience.'<sup>10</sup>

Such large-scale projects as the American Memory site have been vital for broadening public access to cultural materials. However, research carried out on behalf of the scholarly communities in the United States has stressed that more now needs to be invested in 'cyberinfrastructure', that is, 'the layer of information, expertise, standards, policies, tools, and services that are shared broadly across communities of inquiry but developed for specific scholarly purposes' (ACLS, 2006, p1). A major report into resources for e-research in the Humanities and Social Sciences, which was commissioned by the American Council of Learned Societies (ACLS), recommends that the development of cyberinfrastructure in the humanities and social sciences should be regarded as an essential strategic priority. The report argues that in terms of funding, on a *per capita* basis, '[t]he countries of the European Union are arguably far ahead of the United States, especially in the humanities and social sciences areas, given their recent investments in digital cultural heritage.' In the UK, the report argues, there is a more coordinated effort to support the use of ICT in arts, humanities and social science research, and it points to the examples of the UK Data Archive, and work supported by organisations such as JISC, the ESRC, the AHRC and the AHDS (ACLS, 2006, p.25).

## **2.2 JISC Repository Projects and Studies**

This section summarises some of the smaller scale projects in the UK which have focused on specific elements of this research-assisting 'cyberinfrastructure'. Led by Higher Education Institutions and funded mainly under JISC's [Digital Repositories Programme](#) (2005 – 2007), the following projects are ones whose outputs are of most relevance to the Kultur project.

- **MIDESS** (Management of Images in a Distributed Environment with Shared Services)

The experience of the MIDESS project is particularly applicable to the aims of Kultur in terms of the type of material it dealt with. It was a two-year project which explored the use of repositories for the management of multimedia content within the HE sector. At three of the partner universities, repositories were set up using different platforms – Fedora, DSpace and DigiTool, and these were then used to examine the potential for the sharing and re-use of content across institutions. The collections involved ranged from lecture recordings, medical teaching videos, collections of coins and medieval

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<sup>9</sup> <http://www.worlddigitallibrary.org/project/english/about/>. The project partners are UNESCO, Bibliotheca Alexandria, the National Libraries of Brazil, Egypt, and Russia. The project also has \$3 million invested by Google.

<sup>10</sup> Mission statement from the American memory website, <http://memory.loc.gov/ammem/about/index.html>. Some of the challenges faced by the Library of Congress in digitising and describing pictorial images have been discussed by Caroline R Arms, 'Getting the Picture: Observations from the Library of Congress on Providing Online Access to Pictorial Images', *Library Trends*, 48 (2), 379-409

manuscripts, through to digitised photograph and fine art slide collections. The project has provided a series of specifications which outline the requirements of a multimedia repository (Emly, 2007, p.4). Of particular interest for our project are the user requirements and the IPR requirements for multimedia material. Both of these offer useful case studies: while the user survey focuses on collection providers rather than researchers as end-users, some of the issues highlighted around the creation of digital content would seem to apply to potential users (depositors) of the Kultur repositories (MIDESS, WP3). The survey of intellectual property for multimedia repositories includes recommendations for good practice and several valuable case studies covering art and architecture, design, textile design, photographic and cinematographic works (Cordiner, 2006).

- **User Needs and Analysis**

User Needs and Potential Users of Public Repositories. This was a 14-month study from 2005-2006, evaluating five different kinds of public repositories ('public' in terms of those intended for use outside the host institution). The repositories included a digital library, a subject repository, an institutional repository, research repository and an e-learning repository. Its survey of users and non-users offers broad pointers for advocacy and it exemplifies the value of ongoing evaluation of digital repositories, even once they are established (Zuccala et al, 2006).

- **TrustDR** (Trust in Digital Repositories)

A project focused on rights issues in repositories of learning objects. It centres on the premise that systems with low levels of trust have higher running costs, with 'expensive lawyers, contracts and insurance ...used as a substitute for behavioural constraint' (TrustDR website – project overview). To redress this, it has sought to create legal agreements that can then be incorporated into a Digital Rights Management system. Although its main output (a development pack to help repositories manage IPR for digital learning objects) is primarily concerned with teaching and learning rather than research, it contains some relevant discussions and analyses which should be transferable to Kultur's study of IPR, most notably a discussion of the pros and cons of Creative Commons Licences (Casey et al, 2006).

- **CLIC** (Community-Led Image Collections)

An eight-month scoping study reviewing community image collection activity. It surveyed the various barriers facing providers/developers of image collections (including those of museums, libraries and picture libraries), and made recommendations on how national initiatives could help in embedding the collections within the wider national FE and HE sectors. It found that the biggest barrier to image sharing was a lack of trust, arguing that the problem is social rather than technical (and so here overlaps with the TrustDR project). It proposed a three-tier model of community based image collections, which negotiates between local and national collections. Its relevance to Kultur lies in its concern with how HE and non-HE cultures might effectively collaborate, and in its nuanced approach to making material available to different publics.<sup>11</sup>

- **Defining Image Access**

This was a short requirements analysis project, exploring existing image holdings in institutional repositories. Its original aim was to create image data webs to enable

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<sup>11</sup> See the CLIC final report (Miller and Robinson, 2006) for more detail on the levels of community control over material within the three-tiered model.

integrated searches for research images across several repositories. Its findings foregrounded a lack of consistent and interoperable mechanisms to access image collections across repositories. As with Kultur, this project responds to the existing focus on papers and printed research within institutional repositories, and the effects that this has on provision for other types of material. Metadata terms have been dominated by text forms, and IRs are not yet attuned to the additional requirements of images. The final report praises the SERPENT repository, an example of a multimedia research image collection which has successfully customised EPrints software so as to handle domain-specific data.<sup>12</sup> The report is also useful for its evaluation of different repository metadata standards, including Dublin Core, Qualified Dublin Core, JISC's Scholarly Works Application Profile, METS and VRA Core (Shotton et al., 2007).

## **2.3 New Repository Projects**

There are several new JISC-funded projects which are part of the same 'Start-up and Enhancement' strand of the Repositories and Preservation Programme (2007-2009). These projects have been organised according to their overlapping themes on the programme website at [http://www.jisc.ac.uk/whatwedo/programmes/programme\\_rep\\_pres/repositories\\_sue/sue\\_themes.aspx](http://www.jisc.ac.uk/whatwedo/programmes/programme_rep_pres/repositories_sue/sue_themes.aspx).

Although it is too early for these projects to have many visible outputs, this brief summary identifies the projects that seem most closely related to Kultur's aims.

- **SAFIR** (Sound Archives Film Images Repository)

This is the first stage in a larger project to set up a digital library service at the University of York. The aim is to establish a multimedia repository which will complement research publications in the White Rose Research Online (Universities of Leeds, Sheffield and York), and York's VLE.

- **JazzHub**

Managed by the Centre for Jazz Studies UK, this project is creating a central interdisciplinary resource for jazz research. It aims to make available a broad range of material, ranging from sheet music, conference papers, archival material from the Leeds College of Music, sound recordings and teaching and learning materials from FE Colleges and HE Institutions across the UK.

- **PRIMO** (Practice as Research in Music Online)

Again, there are overlaps between the Kultur project and the type of multimedia content in the repository PRIMO is setting up, which is a national resource of music research, largely in video and audio formats. But there are further parallels in the long-term visions, as an anticipated outcome of both projects is a greater recognition of practice based research. PRIMO's aim is to develop an infrastructure for disseminating research involving musical practice, capturing what was once an ephemeral event, and providing an insight into the processes of research and not just the end result. Similarly, the Kultur repositories aim to capture versions and installations of practice-based research, so that users can track the processes of creating an artwork, exhibition or performance over time. Both projects are setting up pilot repositories using EPrints software, though the

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<sup>12</sup> SERPENT is an image and video database of deep-sea research footage. See <http://www.serpentproject.com/> and <http://archive.serpentproject.com>

means of populating project demos is different – PRIMO is inviting submissions from researchers across the UK, which are then screened for suitability by a steering group.

- **The Storage Space**

Like Kultur, this project is also setting up a repository within an HE Arts institution – University College Falmouth, and Dartington College of Arts, which is expected to merge with Falmouth during the course of the project. The repository will initially be for student work – degree shows and dissertations, but longer term it will accommodate all digital media content created at the College, and it will also be linked to the College's VLE. It is based around MS Sharepoint platform and will create a metadata schema from scratch.

- **Images Application Profile**

A short JISC working group project, co-ordinated by VADS (Visual Arts Data Services). It is developing an application profile for describing images held in a repository, and is due for completion in February 2008. Its working group brings together representatives from UKOLN, TASI (Technical Advisory Services for Images), the Open University, and those from previous image-based JISC repository projects (Defining Image Access and MIDESS). The outcome of this project will influence the final metadata schema for the Kultur repositories.

## **2.4 Online Digital Collections and Digitisation Projects**

There are now a wealth of art and moving image collections available online. Useful lists and portals of these collections are available elsewhere,<sup>13</sup> and so the following summary is only intended to point out a few representative examples, firstly from the museum/gallery sector and then from the research/education sector, to give some impression of their scope and objectives. Although these resources tend to have a different remit to the Kultur project, there are certain features our repository model may be able to adapt from them, whether in terms of design, the search options or the delivery of different formats. For advocacy purposes, it will also be useful to be able to locate the purpose and benefits of an institutional repository in relation to other online resources that academics may already be familiar with through their research or teaching. Furthermore, as Jacqueline Cooke has argued, it is important to bear in mind that for visual art, the research environment is not only academia but also the art-world. 'The repository can, therefore, be compared to models of the gallery or art site archive which conventionally 'represent' artists.' (Cooke, 2007, p.2)

- **Museums and Art Galleries**

### *Scale*

It is now commonplace for national (as well as many regional) galleries and museums to have at least a sample of their collections available online. In some cases, gallery websites even provide access to their entire collections – for example all of the National Gallery's permanent works and long-term loans are available in this way, as are the combined collections of all four Tate Galleries, which number over 65,000 works. Other museums and galleries are making selections of their holdings available online in

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<sup>13</sup> See for example the TASI image sites, <http://www.tasi.ac.uk/imagesites/index.php>; VADS image collections, <http://vads.ahds.ac.uk/collections/index.html>; The Moving Image Gateway, <http://filemaker.buvc.ac.uk/MIG/home.php>; Moving History, <http://www.movinghistory.ac.uk/links/index.html>. See also collections listed in the appendix to the Wilson et al (2006), *AHDS Moving Images and Sound Archiving Study*, 122-7

stages, as and when they are digitised. The online collections at the Royal Academy of Arts and the National Portrait Gallery, for example, form part of long-term digitisation projects, and so their image databases are continually expanding. At present, The National Portrait Gallery database contains illustrated records of around 55,000 of the 330,000 works in its collection.<sup>14</sup> The Imperial War Museum (IWM) digitised 30,000 images from its collection as part of a two-year project (2004-2006), with a grant from the Big Lottery Fund, timed to coincide with the 60<sup>th</sup> anniversary of the end of the Second World War. The images are promoted as 'highlights from the collection', and illustrate just under a fifth of the IWM's 160,000 online catalogue records.<sup>15</sup>

### *Use of resources*

Online gallery collections have both a commercial and an educational function. The National Portrait Gallery's Annual Review of 2005-2006 situates its digital collection within a broader and growing internet economy. It reports that online sales from digital and hand-finished prints have made a significant contribution to the gallery's e-commerce, accounting for 60% of its total internet sales (NPG, 2006). The facility to order digital prints of an image via a link is common across many digital gallery collections. This caters for a gift market, but online collections also serve as an extension of the picture library, targeted at picture researchers looking to reproduce images in commercial items such as books, magazines or on websites. The Royal Academy website, for example, has a direct link to the picture library to enable users to order high quality photographs, transparencies or scans of pictures, and also to apply for reproduction licences online.

National galleries and museums are now also putting their energies into developing the educational capacity of their collections. They are starting to investigate how existing resources are currently being used, in order to develop features to improve critical engagement by users. A significant example of this is the National Museums Online Learning Project, a partnership between ten UK museums and galleries, including the British Museum, Imperial War Museum, National Gallery, and the Victoria and Albert Museum. It is a three-year project (2006-2009) and has been given £1.7m as part of the Treasury's 'Invest to Save' budget. According to the project summary, the emphasis is on embedding existing collections within educational environments. Rather than digitising more objects, 'the project will focus on existing databases, articles and functionality to encourage users to engage critically and creatively with museums and gallery collections. Some tools and further functionality will be created to encourage this process'.<sup>16</sup> One approach has been to present users with examples of 'creative journeys' and to encourage lifelong learners to record their own. 'The websites will be seeded with videos and other contributions, showing how people, from novelists through designers and woodworkers have been inspired by museum objects' (British Museum et al., 2006).

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<sup>14</sup> 104,664 of the gallery's works have online records, and of these, 54,252 are illustrated, with copyright restrictions cited as the reason for the metadata-only records. Figures as of November 2007, taken from the National Portrait Gallery website.

<sup>15</sup> Homepage of IWM Collections Online. See also Andalo (2005).

<sup>16</sup> 'National Museums Online Learning Project, 2006-2009: Project Summary'. The ten galleries and museums are: The British Museum, the Imperial War Museum, the National Gallery, the National Portrait Gallery, Natural History Museum, Royal Armouries, Sir John Soane's Museum, the Tate, Victoria and Albert Museum, Wallace Collection.

- **Academic Resources**

Alongside the educational facilities of gallery and museum collections, which tend to be targeted towards school and lifelong learners, there is a somewhat separate field of digital collections more closely affiliated with Higher Education. Over the last decade several projects have been set up to digitise specialist collections and make them available online for use in arts education and research. A major objective of many of these projects has been to improve access to collections which have to be kept in storage, due either to lack of space, or the fragility of the original objects. Making digital surrogates available online enables easy access for researchers wishing to study materials, and reduces the need to make individual appointments to view collections housed at an institution. VADS/AHDS Visual Arts has many such image collections, including the Women's Library Suffrage Banner Collection, art and poster collections from the Imperial War Museum, and design, textile and fine art archives from colleges and universities across the UK (VADS, 2000; VADS 2001). The facility to cross-search these collections using keywords also makes this a valuable resource for teaching.

Many of the collections delivered by VADS were digitised with funding either from the AHRC or from JISC's Image Digitisation Initiative (JIDI) (Ross, 2001). More recently, JISC's Digitisation Programme, which has been running since 2003 and is now in its second phase of projects, has been digitising a wide variety of text, audio and film-based historical material. These include parliamentary papers, a selection of British Library sound recordings (including music concerts, talks by writers and artists, and early spoken word recordings), news film and radio footage, British newspapers, and theatre archives.<sup>17</sup>

In comparison with image resources, video and film archives more frequently present research outputs alongside collections of primary material. This seems to be the point at which the scope of online collections and that of institutional repositories comes together. *Luxonline* for example is a resource for work relating to British film and video artists. As well as biographies, stills and film clips from work by around 50 artists, it also features academic articles on their work. The *British Artists' Film and Video Collection* is a listing of British artist's work available for online viewing. It also has the texts of research papers, online exhibitions and links to conferences which the study collection has been involved in putting on.<sup>18</sup> While not providing access to full text research, *Moving History* stresses that all of the twelve UK public sector film archives involved 'are dedicated to enabling access to their collections for academic research and teaching'. To demonstrate this, the website provides case studies of researchers who are currently using the archives in their work (Moving History website).

### **3. Issues Identified**

The documentation surrounding repository and digitisation projects offers reflection on various issues, and it is useful to consider the barriers that other projects have identified, and their approach for overcoming them. This third and final part of the review will focus on certain themes that seem to recur across several case studies and project reports. These are identified as: cultural issues, copyright, metadata and visibility/access.

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<sup>17</sup> See Programme webpage, [http://www.jisc.ac.uk/whatwedo/programmes/programme\\_digitisation.aspx](http://www.jisc.ac.uk/whatwedo/programmes/programme_digitisation.aspx)

<sup>18</sup> The Study Collection is based at Central Saint Martin's College, and is now part of the AHRC Centre for British Film and Television Studies.

### **3.1 Cultural Issues**

The very broad term 'cultural issues' is being used here to refer to particular research cultures and to the behaviour and motivations of repository users and potential users. Clearly, this is not something that can be so easily separated from the other topics discussed in this section, because to engage with metadata, copyright and visibility requires an understanding of the research and working culture of the user community. Thus the findings of research into user trends and cultural barriers should also inform approaches to these other issues.

#### *Disciplinary Differences*

Discussing the use of digital images within university art history teaching, Sue Luftschein makes some important points about the role of information technology within different research cultures. Within faculties in the natural sciences (and to a lesser extent, social sciences) technology is an integral part of the research and teaching process. In comparison, humanities scholars are 'generally speaking, notoriously late adopters of technology. There exist very few outlets in the humanities for publishing in the digital realm, the number of digital databases in the sciences far outnumbers those in the humanities, and computers as research tools are much more important in the sciences than in any other discipline' (Luftschein, 2005, p.9). She also points out that because humanities scholars are more likely than scientists to use older and not just current sources of information, not all of the information is accessible via the computer. The research process is much more likely to require personal visits to libraries or archives. This disciplinary variation in the typical age of research information is also evidenced in user surveys (Swan and Brown, 2005, p.70)

The report by the American Council of Learned Societies Commission on 'Our Cultural Commonwealth: Cyberinfrastructure for the Humanities and Social Sciences' (2006) also raises a relevant point about the working habits of different research cultures:

Despite the demonstrated value of collaboration in the sciences, there are relatively few formal digital communities and relatively few institutional platforms for online collaboration in the humanities. In these disciplines, single-authored work continues to dominate. Lone scholars ... are working in relative isolation, building their own content and tools, struggling with their own intellectual property issues, and creating their own archiving solutions (American Council, 2006, p. 21)

The fact that technology is not yet such an integral part of research and teaching practices within the humanities as it is in the sciences has a bearing not only on the uses of digital images/collections but also on the willingness and skills of researchers to self archive their work within an institutional repository. A study of open access self-archiving authors suggests that awareness of self-archiving is lower among humanities scholars than in the disciplines of library and information science, computer science, physics and mathematics (Swan and Brown, 2005, p.70). Even where there is some awareness of self-archiving, the actual practical processes of depositing work may well be more of an obstacle for researchers who make less use of ICT in their day-to-day work.

## *Visual Arts*

Looking more specifically at the visual arts, Sue Gollifer, in an e-science scoping study, considers the challenges of encouraging the creative use of ICT within visual arts research. She points to the differences in the nature of the research undertaken in the visual arts in comparison to other disciplines. Whereas science based research 'goes through certain stages or life cycles' and is thus relatively easy to identify, 'the research done in the visual arts is often difficult to define and map out diagrammatically' (Gollifer, 2006, p.1). This is particularly the case with more practice-led research, which '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' (Gollifer, 2006).

As a repository editor of Goldsmiths Research Online and also as an arts researcher, Jacqueline Cooke's discussion of a visual arts perspective on institutional repositories offers particularly valuable insight. The very nature of art research, as distinct from other disciplines, raises conceptual and technical issues of representation. Cooke argues that 'the representation of art practice in an institutional repository requires that we engage in a process of mapping and translation' (Cooke, 2007, p.6). Translating between art practice and research environment may demand that documentation is created specifically for the repository, and this raises various methodological questions. Examples include how to electronically document research conceived of as a material object, how to translate an event, such as an exhibition, into the form of a bibliographic citation, and how to document referenced resources (a metadata option when archiving articles) if these operate as visual allusions.

## *Publication culture and motivations*

As well as disciplinary differences, there are other cultural factors likely to influence whether or how researchers would use an institutional repository. As Michael Day has argued with respect to journal articles, to understand the impediments to the successful population of IRs, it is important to consider the different reasons for publishing in the first place, and the place of journals within a broader communication system. In his 2003 study, 'Prospects for institutional e-prints repositories in the UK', written as part of the ePrints UK project, Day questions the assumption that the authors of peer-reviewed papers write primarily for research impact.<sup>19</sup> He suggests that although dissemination is clearly an important function of journals, it is misleading to view it as their sole purpose. Instead, he draws attention to the multiple functions fulfilled by journals, including quality control through editorial processes and peer-review, the establishment of a distributed public-domain archive, and the recognition of authors. There are many reasons why authors write and submit papers.' In science for example, publishing a paper to establish priority over a particular advance or discovery may at times be more important than being cited by peers. More broadly, across subject areas, articles may be written as a means of establishing a reputation, to test out a new idea or theory, or as a precursor to a bigger work (Day, 2005; Swan and Brown, 2005, pp.94-5). The demands of the research assessment, in the UK the Research Assessment Exercise (RAE), have also had a significant impact on publishing culture across different disciplines.

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<sup>19</sup> This is a reference in particular to Steven Harnad's position, as exemplified in 'The Self-archiving Initiative', *Nature*, 410 (2001), 1024-1025

Although these observations are based largely on text outputs, they nonetheless remain important to certain segments of the arts research community, particularly those engaged in theory-led research. For example, discussions of the current status of art history publishing in the journal *The Art Book* foregrounds the impact of research assessment on the number and format of works submitted for publication, both in the UK and in the US. Carol Richardson points out that the short (four to five year) timescale of the RAE encourages the writing of single authored works that can be published quickly, rather than longer or collaborative projects. More edited volumes are now published, with research scores in mind, and more PhD theses are submitted for publication at an earlier stage, due to time pressures (Richardson, 2002). But another strand of the publication discussion focuses on the decline of art history book publishing due to the high permissions costs involved (Follin, 2005; Silver, 2005). Larry Silver argues that if this trend continues, then peer-reviewed journals will need to be 'increasingly credited' in research assessments 'as measures of scholarly merit and productivity, almost as much as books used to be' and that 'catalogue essays and conference proceedings, particularly with prestigious museums or international organisers as their convener, will need to be taken more seriously than in the past.' (Silver, 2005, p.23, p.24). The impact of research assessment methods on publishing trends has attracted much attention, but there seems to be less study into the effects of the RAE on more practice-led modes of research.

### *Implications*

There are two main cultural issues that our project needs to pay particular attention to: firstly, the nature of the everyday working practices within the creative arts communities (and particularly the place of information technology within these practices), and secondly, the various motivations for publishing or disseminating research. This information will be important both in designing the functions of the repository, and also in the advocacy processes. For example, the benefits of a repository in assisting with the processes of the RAE may be a useful selling point. Similarly, if future measurements of art history academic contributions are revised so that articles and papers are given more weight, then the suitability of an IR for making full-text, digital versions available can be stressed. However, because of the visual and multimedia emphasis of the project, we also need to consider to what extent similar pressures and motivations apply to the dissemination of non-text media, as in performances and exhibitions. This is clearly an area that needs further study, and interviews with practice-based researchers will provide a valuable opportunity for gathering more specific evidence. Along with the findings of online questionnaires, interviews with staff from all three arts institutions will help the project to gain a clearer insight into the research culture of the repository's main user group.

### **3.2 Copyright and IPR**

The remaining themes dealt with in this review are more practical issues: copyright, metadata and usability. It is beyond the scope of the review to assess different systems and licences for copyright and metadata – the Kultur project has separate workpackages devoted to investigating solutions for each of these areas in detail. Instead what follows here is a survey of some of the recurring problems identified by other arts-based

repository and digitisation projects, and an indication of the range of strategies employed to try and overcome them.

There are two main IPR issues to consider when putting visual and multimedia material online, both of which are potential barriers. The first is the process of obtaining rights to reproduce the material online, and the second relates to concerns over how material may be appropriated by others. While these barriers have to be overcome in creating any kind of online collection, i.e. text as well as multimedia, the latter barrier is even more prominent with visual, film and sound material. There is a greater risk with arts-based collections relating to how material is used by others, for example, fears that images may be downloaded for commercial purposes, or used on websites that the original creator may not endorse.

The MIDESS survey of university staff involved in creating digital collections (which included collections of art slides, photography, film and video) found that copyright was regarded as a big issue, and that 'there was a very low awareness of copyright legislation amongst respondents' (MIDESS, WP3, p13). Concerns over copyright affected both the creation of digital content, and the sharing of that content. Many of the collections had not been made freely available, and while time restraints were a factor here, the survey also found copyright uncertainties a deterrent – respondents were more concerned about whether their content was 'legal' rather than protecting their own copyright. (MIDESS, WP 3, p14)

In a survey carried out by the AHDS, creators and curators of moving image and sound archives were questioned about the challenges they faced in establishing and maintaining their collections. Along with metadata and access, copyright was identified as one of the largest issues that projects face. Some of the specific comments from the 92 organisations and individuals who responded raise pertinent issues for the Kultur project, particularly in its engagement with performance work. One respondent highlighted how big an issue copyright and consent is for performance work, adding 'we have to ensure that all members of groups are aware of not just recording but of storage of their image', while another remarked that 'unpublished field recordings involve performers and donors who sometimes feel strongly about widespread dissemination when the performers are not compensated, or in the case of possible misuse of music that was originally performed in a certain cultural context' (Wilson et al., 2006, p.23, p.24).

#### *Copyright strategies: Obtaining permissions*

With image collections, it is far easier to obtain permission for images when their copyright is in the public sector. This is part of the reason that some gallery collections have a greater proportion of illustrated online records than others – the National Portrait Gallery, for example, cites copyright restrictions as the reason that only half of its digitised records contain an image (NPG website). In contrast, obtaining permissions was more straightforward for the Imperial War Museum Art Collection, as the large majority of its collection was Crown Copyright (VADS, 2000).

Institutional repositories generally have a different relationship with rights holders. In theory, rights over research outputs and learning materials are owned by the employer (the university), unless there is a contrary agreement. But in practice many institutions

leave copyright decisions to the employee (Korn and Oppenheim, 2006), and with printed, published works, copyright is often signed over from the author to the publisher. Because the repositories in this project are designed to be self-archiving, obtaining the permission of creators will be part of a broader process of encouraging them to deposit their work. Thus copyright uncertainties need to be addressed as part of the advocacy and staff training stages, and should also be addressed in guidance on the repository website. The creator's rights over different kinds of outputs (published and unpublished works, performances, exhibitions, video and so on) should be made as clear as possible and the project's IPR workpackage may need to draw up case studies for this range of outputs as well as FAQs pertaining to rights. In addition, an important factor in encouraging creators to deposit digital version of their work may be providing choice over how files are delivered, so as to give creators some control over how their work is used by others. Multimedia digitisation projects offer some options, as summarised in the following.

*Copyright strategies: protecting how material is used*

- **Assertion of how material can be used.** The websites of many online collections clearly state that information is only to be used for educational and research purposes, and that images should not be reproduced without permission.
- **Monitoring the resolution of images to prevent commercial gain.** The compression of image, moving image and sound files for web delivery can also prevent their use for commercial ends. While the resolution of images from the online IWM Art Collection 'is high enough for good printouts to be made for individual users, a much higher resolution is required should somebody want to create a printed image commercially' (VADS, 2000). Other digitisation case studies make similar points (eg Coquia, 2005) and the major gallery collections all use a lower resolution image online and offer options for purchasing higher resolution images.
- **Watermarking.** Images can be given an identifying digital watermark, so that if a digital image is re-used, it is clear which institution/organisation's website it has been taken from. However some feel that watermarking can damage the aesthetic integrity of images (as was the case with the IWM Art Collection (VADS, 2000). Invisible watermarking, which is not visible to the human eye is another option, but this can be expensive and time-consuming. Watermarking does not seem to be particularly popular with moving image archives either, although the British Pathe News Archive is an exception here.
- **Streaming.** Video, film and audio material can be streamed, so that while visitors can easily view or listen to the material, they are prevented from easily downloading it. *Luxonline's* video clips are streamed, as are all of the UK's public sector film archives brought together on the *Moving History* site.
- **Edited highlights.** Unless dealing with very short works, most freely available film and video archives provide short, preview clips from longer works. In the case of public archives, researchers can usually arrange to view the full work in person. In terms of availability, there are some parallels between these edited

highlights of audio-visual material and the online extracts from books, as seen in the 'Search Inside' facilities on Amazon, or through Google Books.<sup>20</sup>

- **Creative Commons Licences.** Creative Commons allows the creators of digital content to 'easily mark their creative work with the freedoms they want it to carry'. It can be used to change copyright terms from "All Rights Reserved" to "Some Rights Reserved" (Creative Commons, 2007). Creative Commons licences are proving popular in HE and FE institutions, and are also being used by the Open University OpenLearn initiative and the BBC Creative Archive.<sup>21</sup> However there has been some debate within the digital repositories community over their purported benefits. Naomi Korn and Charles Oppenheim's assessment of their suitability for HE and FE contexts ends on a cautious note, and provides a list of problems with the licences. They argue that the licences do not specifically cater for educational purposes, highlight problems with their irrevocability, and question whether they would even be valid within UK law (Korn and Oppenheim, 2006). On the other hand, the recently completed TrustDR project suggests that CC can be used very successfully in educational contexts, and directly defends it against the problems highlighted by Korn and others. The project does suggest, though, that 'ironically, and contrary to some of the popular misconceptions surrounding CC' organisations and institutions 'have to be already relatively well organised in terms of IPR management to make effective use of the CC licences and their possible derivatives' (Casey et al., 2006). The suitability of such licences for the Kultur project will be further investigated as part of the IPR workpackage.

The application of any (or a combination) of these strategies to protect copyright raises certain practical and strategic issues which, again, will need some consideration as part of the project's copyright workpackage. Unlike many of the online special collections, the repository model that Kultur is creating will deal with a wide range of object types. This makes the notion of a core copyright policy slightly more complex, because the physical application of copyright-protecting mechanisms will differ across different formats. For example, if a form of Creative Commons is chosen, then this may be applied using a cover sheet for text documents, but will need to be implemented differently with film and audio material. Decisions will also need to be made about the degree of choice (if any) given to the creator/depositor over delivery options (e.g. whether they are given the option of having a film work streamed, or showing low resolution version, edited clips or watermarking). Different mechanisms for protecting IPR will respond to different concerns about how work may be used.

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<sup>20</sup> See [www.amazon.com](http://www.amazon.com) and <http://www.amazon.com/Search-Inside-Book-Books/b?ie=UTF8&node=10197021> Both of these services, however, are more closely related to income generation than the open access principles behind institutional repositories.

<sup>21</sup> OpenLearn is a website giving free access to course materials from The Open University, <http://openlearn.open.ac.uk/> A year-long trial phase of the BBC Creative Archive ended in September 2006, and the pilot is now undergoing a 'public value test'. The pilot made clips, full programmes, audio and images freely available to the public. <http://creativearchive.bbc.co.uk/>

### **3.3 Metadata**

#### *Digital collection creators and curators*

Case studies of digitisation projects and surveys of collection creators concur that metadata is a major concern. The main issues facing those responsible for digitising a collection can be summarised as

- **The lack of commonly agreed upon standards for image cataloguing.** This is a point repeatedly raised by those involved in HE image digitisation projects (in the UK and the US) who contributed to two special issues of *VRA Bulletin* on 'the digital transition' (Lucker, 2005; Luftschein, 2005; Bourne, 2005).
- **Low awareness of existing metadata schemas.** This was a particular problem amongst the HE staff surveyed in the MIDESS project, who had created collections for use in their own research and teaching. 'The majority of respondents had no metadata associated with their digital material. Awareness of the requirements for metadata, or of current metadata formats and schemas was low' (MIDESS, WP 3, p.13)
- **The need for a relational system for describing images.** In a visual archive, many images will require multiple records, which account for the work displayed in a photographic record, as well as the photograph itself (Bourne, 2005). The VRA Core metadata schema accounts for this by distinguishing between 'work' (displayed object) and 'image' (photograph).
- **The challenges of making metadata useful to end-users.** The Library of Congress' project to provide online access to images found that 'one of the main problems ... was organising and describing visual materials cost-effectively ... in ways that helps users to find the information, illustration or evidence that they need' (Arms, 1999, p.407). The AHDS survey of sound and moving image archive curators found that metadata was perceived to be the most significant issue in carrying out their work. One respondent commented on the inadequacy of existing metadata forms: 'Much metadata does not get to the heart of the information content, but concentrates only on technical metadata and somewhat banal and uninformative titles. The trouble is that providing really helpful metadata enabling resource discovery is very expensive.' (Wilson et al., 2006, p.23)

#### *Metadata from a repository perspective*

The challenges identified in digitisation projects remain relevant for the creation of an arts-based institutional repository. But other JISC-funded projects have identified additional issues more specific to the metadata within IRs. The Defining Image Access project (see Related Projects section) found that existing IRs currently offer poor provision for images and other non-text material. Both this project and MIDESS highlighted a lack of interoperability, leading to difficulty in accessing image collections

across repositories. Where image collections were available, the Defining Image Access project found that 'their metadata quality is variable, even generic metadata (i.e. Dublin Core) was not always consistently provided, and there was very little domain-specific metadata of the kind that would indicate the content of an image, or provide a context for its interpretation' (Shotton et al., 2007, p.24). The MIDESS final report states that one clear lesson from the project was 'that even where established standards are being followed, this is not sufficient to guarantee compatibility and interoperability. Application profiles can help in this regard, often supporting a very specific and tailored approach to metadata, deriving recognised elements from the name-spaces specified in order to meet the needs of a particular community' (Emly, 2007, p14). This reinforces the value to the Kultur project of the Image Application Profile currently being developed by VADS.

A final important metadata issue concerns its language and presentation, and the need to tailor this to users effectively. In an article on repository users, Dana McKay cites a 2007 study which showed that 'the detailed metadata input fields displayed by ePrints and DSpace in their document deposit interfaces were daunting to both academic staff and librarians. Both groups complained that they often did not have all the metadata, and that it was not clear from either system which elements were required and which were optional' (Cunningham et al, 2007). This foregrounds the need to ensure that metadata fields are framed in the right kind of language for depositors, and that the core, minimum fields are clearly demarcated from additional fields. Here the Kultur project will benefit from working closely with the researchers, obtaining feedback on the demonstrator repository, and seeking advice on interfaces from VADS, who are familiar with designing interfaces for use by the creative arts community.

### **3.4 Visibility and usability: end-users**

The practical issues considered so far, copyright and metadata, impact upon the process of getting content into an institutional repository. But beyond the population of a repository lies another obstacle – that of making it visible to end-users or information seekers. McKay cites research showing that many academics are unaware that their institution has an IR (Kim, 2006), which suggests that the likelihood of the repository being known to researchers beyond the host institution is limited. The most obvious way of tackling the visibility of IRs is through commercial search engines such as Google. A study into the impact of open access publishing on the use of scholarly journals found that search engine indexing has in fact proved a more important factor in increasing visitor numbers. Analyses over a two year period (2003-5) demonstrate that the role of search engines constitutes 'a paradigm shift in the way that scholarly users navigate to content.' (Nicholas et al, 2007, p.12)

Another means of making repositories more visible is through more personal forms of publicity, though this may be less straightforward to facilitate than search engine indexing. One of the conclusions in the final report of the JISC analysis of user needs and potential users is that

Digital repository managers may need to give more consideration to the power of 'buzz' networking; that is, the importance of personal networking and information sharing among friends and work colleagues. A significant number of individuals surveyed for this project indicated that they had learned about The NeLH, CogPrints, JORUM, The UK Data Archive, or JORUM through a friend or colleague. (Zuccula et al, 2006, p.41)

IR users fall into three main categories: authors/creators, data creators and maintainers (those who upload the documents, who may be librarians or the authors if self-archiving) and information seekers. The end users searching for information may well also be authors/creators themselves, but they have quite different aims in each context. While several studies of users in their authorship role have been carried out (summarised by Mark and Shearer, 2006), much less is known about end users (McKay, 2007). However, a picture of user behaviour can be inferred from studies into the usage of journal databases and open access collections

IR users will visit infrequently, download only a few articles at a time, perform very simple searches, and use results from the top of the results list (though they will browse widely in other ways if offered the chance).

This behaviour leads to certain recommendations for structuring a repository, namely that:

... search mechanisms should be easy to use, that search defaults should produce a wide range of results, and that results should be displayed with the best possible relevance rankings. IRs should also facilitate browsing (preferably of the whole collection, as well as search results), and provide the widest possible range of articles. (McKay, 2007)

### *Implications*

The above studies reinforce the need for the Kultur project to take into account different kinds of repository users, and to discriminate between the needs of each. While it is important to get the repository populated, and to ensure that the depositing process is user-friendly and efficient, the demands of the information-seeking user should not be overlooked, but worked into the initial design of the pilot repositories. The surveys in workpackage 8 of the project ('assessing the response of multiple audiences') will evaluate how the repository is being used, as will the application of IRS (Institutional Repository Stats Software), and this data should help us to improve user processes of retrieving material.

## **4. Conclusion**

The creative arts are very much underrepresented by existing institutional repositories. The majority of IRs in the UK have been established to suit the requirements of text outputs, and this has left them poorly attuned to the demands of visual and multimedia material. This is one of the reasons that take-up within this subject area remains low. In developing the capabilities of the existing eprints schema, the Kultur project can learn something from the wealth of digitised image and multimedia collections that are now accessible online, several of which have been designed for use in academic research and teaching. Accounts of these projects give an indication of likely obstacles. In particular, they draw attention to the fact that metadata standards and copyright are made much more complicated when applied to visual, audio and moving image data. Complications arise, for example, in obtaining permission to broadcast a performance

involving numerous groups and individuals, or in establishing how many and what kind of metadata records are required to usefully describe a single work.

Previously funded repository projects offer some relevant guidance on these practical obstacles, though this guidance is more developed with respect to still images than it is with time-based media. Where image collections do exist in IRs, there remains a lack of interoperability between them. In addition to technical limitations, previous projects also foreground the significance of social and cultural factors in preventing the wider sharing and dissemination of material. Research considered in this review further underscores the need to understand the wider research culture within which the target user group are working. In order to respond to the conceptual and practical challenges of representing art practice in a repository, it is necessary for the project to know more about the working habits and motivations of arts researchers. The project's user profiles will play an important role here. This knowledge will help us to pinpoint where a repository could fit within the research process, knowledge which will be valuable in advocating the project. As well as encouraging the population of the repositories, insight into the research culture should also help us put in place strategies for ensuring the repository's visibility to information-seekers. This reflects research into the usage of repositories, which has stressed the need to cater to the requirements of different kinds of users: end-users as well as creators.

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