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Preserving an emerging digital arts landscape: digital preservation at University of the Arts London

Elisabeth Thurlow

Digital technologies are affecting all aspects of modern life, with both art and libraries becoming more digital. This presents new opportunities for engagement, but also creates significant challenges to the long term future of our collections, due to the rapid changes in technology and the threat of digital obsolescence.

This article will reflect on the ongoing work at the University of the Arts London (UAL) to preserve and provide access to the university's growing digital collections. Digital preservation is an emerging area of practice. What progress have we made so far and what does the future hold for our digital collections?

Introduction

In his influential 2013 book, Adrian Brown defines digital preservation as the process of maintaining a digital object for as long as required, in a form which is authentic, and accessible to users¹. In practice, digital preservation is a combination of people, processes and technologies, which together provide the means to capture, preserve and provide access to digital objects, for as long as necessary.

This article will reflect on the ongoing work at the University of the Arts London (UAL) to preserve and provide access to the university's growing digital collections. It will share the lessons already learned during the delivery of digital preservation activities, and demonstrate the benefits being made to our wider collections management practices. This knowledge sharing will be of benefit to other institutions also considering the long term future of their digital collections.

UAL is Europe's largest specialist arts and design university, comprising Camberwell College of Arts, Central Saint Martins (CSM), Chelsea College of Arts, London College of Communication (LCC), London College of Fashion (LCF) and Wimbledon College of Arts. The university offers a wide range of courses in fine art, design, fashion, media, communication and performing arts, as well as new courses in emerging areas like virtual reality. Reflecting the growing convergence between creative practice and technology, the university opened the UAL Creative Computing Institute in 2019.

The increasingly digital nature of the arts is reflected in UAL's archives and special collections. The collections held across UAL chart past and contemporary creative arts practice, the development of art and design education, and the emerging digital arts landscape. They form a significant cornerstone of the university's research infrastructure as well as an essential teaching resource. The use of these collections is embedded into academic practice at all levels and across all of the colleges.

Across the six colleges of the university we hold over 140 collections, many of which contain an increasing amount of digital materials. The management and preservation of these growing digital materials presents us with a challenge but also much opportunity.

Since 2014, UAL has been engaged in a project to preserve and open up online access to the university's digital collections, to allow these rich digital resources to be leveraged for teaching, learning and research. Since 2018, this has included

1. Brown, Adrian (2013) *Practical Digital Preservation: a how-to guide for organizations of any size*. London: Facet, p. xii.

implementing a dedicated digital preservation system and we are now working towards the development of a new user interface to support increasing interaction with these digital collections.

We can see exciting developments being made as our students and colleagues embrace the use of emerging technologies, including an increasing use of photogrammetry and 3D imaging for digital capture, as well as artists embracing the use of virtual and augmented reality in their work. Both shifts are already impacting our digital collecting, presenting new challenges for preserving and providing access to our art and design collections.

What is digital preservation and why should art libraries care?

Digital preservation refers to all of the activities which are necessary to ensure the maintenance and management of digital objects, so that they can be accessed and used by future users². Digital objects, or digital materials, are broad terms which encompass both *digital surrogates*, created by documenting the original object, either in whole or in part, through the process of digitisation, and *'born digital' materials*, which were born digitally and for which there has never been an analogue counterpart³. Digital materials are now present in most library, museum and archive collections. However, unlike many other physical collections that can survive for many years without close attention, the digital materials held in the collections of art libraries and elsewhere will not.

The digital environment around us changes quickly. Recognising this challenge, digital preservation has emerged as a new area of work involving close collaboration between IT and heritage professionals, who have a shared goal to care for our digital legacy. Our digital materials might be accessible only by using specific hardware, which ultimately becomes unavailable, or the programmes needed to read them become outdated. Without action, these materials could be lost forever. We therefore need to look after what we create today to make sure that we can continue to access it in the future.

The collections at UAL contain both digital surrogates and born digital materials. We have been digitising our physical collections over a period of years, including previous large-scale digitisation projects such as the production of digital images hosted on the Visual Arts Data Service (VADS)⁴. More recently born digital materials have arrived into our collections as part of new acquisitions. Regardless of their origin, all of our digital objects – in any format – are at potential risk of obsolescence, corruption or accidental deletion. Storage alone is not a solution to digital preservation. They need to be actively managed, so that they remain accessible over time.

Digital Archives and Collections Project at UAL

Like other institutions we have been thinking about digital preservation for a number of years. We have a long-established history of physical collections management and UAL is home to an accredited museum and an accredited archive service. Despite a rising awareness that the digital materials held within our collections were at risk, an experience of data loss proved their vulnerability. Although the digital materials were able to be recovered, this experience helped build the case for digital preservation at the university, leading to the initiation of the UAL Digital Archives and Collections Project.

The project has brought together a working group of special collections librarians, archivists, museum curators and IT specialists. In its earliest form, the project started in 2014, when UAL first started exploring how it could better manage and provide access to its digital collections. The project was approved and awarded five years of funding in 2017.

The project's aim is to put in place the infrastructure to preserve the university's growing digital archives and special collections, leading to the creation of an online portal. Managed and supported by the university's IT Services in partnership with Library Services, the CSM Museum and Study Collection, and the LCF Archives, the project has a strong strategic fit as it progresses many of the university's digital ambitions.

During a pre-discovery period, a scoping exercise was carried out to identify collections containing digital materials. A full discovery, tender and procurement

2. University of Michigan (2018) *University of Michigan Library Digital Preservation Glossary*. Available at: <https://www.lib.umich.edu/preservation-and-conservation/digital-preservation-glossary> (Accessed: 10 December 2019).
3. Digital Preservation Coalition (2015) *Digital Preservation Coalition Handbook*. Second edition. Available at: <https://dpconline.org/handbook> (Accessed 10 December 2019).

4. University of the Creative Arts (2018) *Visual Arts Data Service*. Available at: <https://vads.ac.uk/> (Accessed: 10 December 2019).

exercise followed, and since early 2018 we have been implementing a digital preservation system, Preservica Cloud Edition Professional⁵. Digital preservation is, however, more than just a system: its implementation has also involved a significant culture change as we introduce new policies and procedures for managing our digital collections. The introduction of a new digital preservation policy for our archives, museum and special collections has presented an opportunity to refresh our existing collections management policies, helping us to improve wider practices.

Digital preservation is a growing concern across the university, and there is a large amount of digital content being created across different departments. However, the initial focus of activity has been on the university's rich digital archives and special collections, which are held across the college libraries, the UAL Archives and Special Collections Centre, the CSM Museum and Study Collection, and the LCF Archives. Digital collections not owned by UAL or not intended for permanent retention for example, licensed material, are not in scope of our digital preservation activities. Other priority areas, including the long-term preservation of UAL's research outputs, have already been identified for a second phase of the project.

During the implementation of the digital preservation system, the university has continued to create more digital materials or take in new collections, which will also require preservation. This growth in digital holdings is not the only challenge. The nature of what we are collecting, including born digital artworks, is also changing, reflecting the progressively more digital nature of the arts.

Our metadata legacy

Digital preservation is an ever emerging field of practice. Digital preservation represents new territory for UAL and as a result, we have been engaged on a continuous learning curve throughout this project. Knowledge gained includes a greater understanding of our collections and their related metadata.

To support the automation and scaling up of processes, we have explored the integration of our new digital preservation system with our existing collection catalogues, which include separate collection management systems, using separate cataloguing standards, for managing archives (Axiell Calm), museum (The Museum System, or TMS) and library collections (Koha). This process has been illuminating, not only increasing our understanding of our systems and their limitations, but also allowing us to analyse the metadata we currently hold that describes and gives structure to our collections, held within these systems and elsewhere.

Metadata underpins the management and use of collections, as it is needed for discovery and interpretation, providing provenance, context, and structure⁶. The importance of metadata has been given renewed importance at UAL as we progress our digital ambitions.

The focus of our initial digital preservation activities has included the digital outputs from numerous digitisation projects, carried out over a number of years and across a number of UAL collection sites. This has led to a huge variation in the quality of metadata produced and the arrangement of our digital files. The metadata issues we have encountered will be familiar to other institutions: a lack of consistency, varying file structures and naming conventions, or the presence of genuine human errors.

The ongoing preparation of these selected digital collections for upload to the digital preservation system has included an amount of 'digital housekeeping' on our digital files and associated metadata. As part of the scoping of UAL's digital collections, we have been assessing the collections and their accompanying metadata, to identify whether the information held meets our minimum requirements for ingest into the digital preservation system. This process ensures that file names and structures are meaningful, catalogue records are present, and together will ultimately aid in their future discovery.

As the Digital Preservation Coalition (DPC) Handbook states:

...metadata is much cheaper and simpler to produce at the time of creation or very soon after...the more time that passes, the more difficult, time-consuming, and expensive it becomes to reconstruct the required information to create useful metadata⁷

5. Preservica (2018) 'University of the Arts London selects Preservica for ambitious new digital preservation initiative', *Press Release*, 23 March 2018. Available at <https://preservica.com/resources/press-releases/university-of-the-arts-london-selects-preservica-for-ambitious-new-digital-preservation-initiative> (Accessed: 31 January 2020)

6. Thurlow, E. (2019) 'Ironing out the digital: Housekeeping at UAL', *Digital Preservation Coalition blog*, 1 February 2019. Available at: <https://www.dpconline.org/blog/ironing-out-the-digital-housekeeping-at-ual> (Accessed: 19 December 2019).

7. Digital Preservation Coalition (2015) *Digital Preservation Coalition Handbook*. Second edition. Available at: <https://dpconline.org/handbook> (Accessed: 10 December 2019).

Going back and reviewing the digital files and related metadata held, and undertaking any needed remedial work on both, is admittedly a time-consuming task. We have therefore focused on identifying the minimum yet sufficient level of information required to enable the management and use of these digital materials once uploaded to our digital preservation system. We have done this whilst considering what would be realistic to achieve – identifying what information is needed now and what could be improved at a later date if time and resources allow.

As well as supporting systems interoperability, undertaking a basic level of digital housekeeping on our data will ultimately improve the information we hold, aiding our understanding of our collections today as well the discovery of these materials in the future. It will also allow us to benefit from the potential of automating some of our processes in the future.

Alongside the issue of quality is the question of *where* to store metadata. Recognising that the digital preservation system's strength is understandably *preservation*, we will continue to use our collections management systems to manage our descriptive and administrative metadata, whilst technical and preservation metadata will be stored and managed within the digital preservation system. At present we are exporting metadata from these source systems to the digital preservation system as part of the upload of digital materials. However, as recognised through their work to pilot institutional digital preservation at the University of St Andrews, this introduces the risk that discrepancies in any duplicated metadata may emerge over time⁸. Future areas of development will therefore need to prioritise mechanisms which will support an automated update of metadata between the disparate systems.

The knowledge gained through our digital housekeeping activities will inevitably improve future practices. Through metadata capture we can see how our practices have changed and will continue to improve thanks to a growing awareness of the importance of metadata for both systems interoperability and for long term digital preservation⁹. Putting our learning into practice, we are working together as a community of collections managers, brought together from across the university, to ensure that any future digitisation projects in which the university takes part will incorporate best practice around issues such as file naming and preferred file formats, to support both access and preservation¹⁰.

The future of our collections

Digital preservation does not sit still. As our collections grow and they begin to include more complex digital objects, it is vital to understand the nature and content of these digital collections, to be able to plan for their future. The early production and ongoing maintenance of a digital asset register is helping us to manage our growing digital collections. A digital asset register is a useful starting point for assessing the extent of your digital collections, to help identify priorities and plan for necessary digital preservation actions¹¹.

The digital asset register identified that at least 29 of our 140 plus collections at UAL currently contain either digitised or born digital materials. The collections are home to more than 20 terabytes of digital materials and therefore we are initially focusing on an agreed list of priority materials. These priority materials represent various types of media and include materials from collections held across the six colleges. They have been identified as a priority either for preservation reasons, improved access, or a combination of the two. Those flagged as being prioritised primarily for preservation are those which are considered most vulnerable. This may refer to concerns around current storage, for example digital materials held on external hard drives, or due to the age of the digital material itself. Its prioritisation may otherwise be based on its uniqueness; for example, digital surrogates could be digitised again if needed, whilst we will likely be unable to replace born digital materials if lost. The digital asset register is subject to an ongoing annual review, reflecting the growth of our collections and the need for the active management of our digital materials.

Digital preservation planning will also form a significant part of our future digital collecting processes. Collections development at UAL will continue to follow the existing collecting remit of its archives and special collections. However, to help safeguard our digital materials, we should also consider digital preservation needs associated with managing digital materials as part of

8. Rippington, S., Fina, F. and Clements, A. (2019) 'Piloting institutional digital preservation', *JISC blog*, 17 November 2019.

Available at: <https://researchdata.jiscinvolve.org/wp/2019/11/07/piloting-institutional-digital-preservation/> (Accessed: 18 December 2019).

9. Thurlow, E. (2019) 'Ironing out the digital: Housekeeping at UAL', *Digital Preservation Coalition blog*, 1 February 2019. Available at: <https://www.dpconline.org/blog/ironing-out-the-digital-housekeeping-at-ual> (Accessed: 19 December 2019).

10. Thurlow, E. (2019) 'Ironing out the digital: Housekeeping at UAL', *Digital Preservation Coalition blog*, 1 February 2019. Available at: <https://www.dpconline.org/blog/ironing-out-the-digital-housekeeping-at-ual> (Accessed: 19 December 2019).

11. Digital Preservation Coalition (2015) *Digital Preservation Coalition Handbook: Getting Started*. Second edition. Available at: <https://www.dpconline.org/handbook/handbook/getting-started> (Accessed: 2 January 2020).

collecting. Digital is already impacting UAL's practices around collecting, epitomised by the presence of new digital artworks in our collections, which include virtual reality artworks. Digital art is defined as a term used to describe art made or presented using digital technology¹². The term was first used in the 1980s but in recent years digital art has become more interactive, which presents a further challenge for its long term preservation.

More recently we have begun developing a user interface for our growing digital collections. Building on our established physical spaces, we are now working towards the creation of a digital space for users to engage with our collections – in a way which will meet the needs of our creative community and provide a resource which can be used in arts education, including opening up new areas of research and collaboration.

Looking further ahead, we will look for opportunities to roll out digital preservation across the university, beyond our archives and special collections and have already identified future priority areas. As well as the ongoing education of staff, a long term aim would be to seek opportunities to educate our students about basic digital preservation best practices. This would highlight the importance of digital preservation for protecting the digital outputs of their creative practice, equipping students with vital skills they can carry into their future careers.

Conclusion

Best practice is still developing in the field of digital preservation. Our practices will remain responsive and will continue to be updated to reflect best practice. But we are already seeing the benefits with improvements being made to collections management. For example, this has already positively impacted on UAL's digitisation processes, where we have been improving the quality of digital capture, thanks to an increased awareness of digital preservation needs.

Digital preservation is not just a case of purchasing a solution - to add to our already complicated digital landscape - but has involved improving our practices, policies, staff training offer, IT set up and more. Our learning and practices will continue to evolve as we progress on our digital preservation journey.

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12. Tate (2019) *Art Terms: Digital Art*. Available at: <https://www.tate.org.uk/art/art-terms/d/digital-art> (Accessed: 11 December 2019).