



*West Yorkshire
Archive Service*

Digital Archives Policy

June 2007

West Yorkshire Archive Service (WYAS) collects, preserves and makes available the county's documentary heritage, for legal purposes and historical research. The Service is funded by, and works on behalf of, the five Metropolitan District Councils of Bradford, Calderdale, Kirklees, Leeds and Wakefield, as part of a larger organisation, West Yorkshire Joint Services. West Yorkshire Archive Service incorporates the following repositories:

WYAS Bradford

Central Library
Prince's Way
Bradford
BD1 1NN
t. +44 (0)1274 435099
e. bradford@wyjs.org.uk

WYAS Calderdale

Central Library
Northgate House
Northgate
Halifax HX1 1UN
t. +44 (0)1422 392636
f. +44 (0)1422 341083
e. calderdale@wyjs.org.uk

WYAS Kirklees

Central Library
Princess Alexandra Walk
Huddersfield HD1 2SU
t. +44 (0)1484 221966
f. +44 (0)1484 542297
e. kirklees@wyjs.org.uk

WYAS Leeds

2, Chapeltown Road
Sheepscar
Leeds LS7 3AP
t. +44 (0)113 214 5814
f. +44 (0)113 214 5815
e. leeds@wyjs.org.uk

WYAS Wakefield

Registry of Deeds
Newstead Road
Wakefield WF1 2DE
t. +44 (0)1924 305980
f. +44 (0)1924 305983
e. wakefield@wyjs.org.uk



West Yorkshire Archive Service

Digital Archives Policy

1. Policy Purpose

Digital preservation refers to the actions required to ensure continued and reliable access to authentic digital records. This document affirms West Yorkshire Archive Service's (WYAS) formal commitment to address the challenges surrounding the indefinite preservation of the unique digital archives of West Yorkshire.

The bulk of WYAS's existing archive collections are in traditional, physical formats, such as paper and parchment. Increasingly, however, digital records are being offered for archival preservation, and WYAS also produces digital copies of traditional records for access reasons.

WYAS recognises that there is a great risk of losing this digital heritage due to the continual development of computing hardware and software. Other threats include the physical deterioration of digital storage media, rapid technological obsolescence, uncertainty about resources and strategies for the curation and preservation of digital records, and legal barriers to digital preservation activity.

WYAS appreciates the need to build sustainable but flexible strategies for managing digital archives in order to fulfil its mission to seek and preserve all records, regardless of physical format, which document the histories of West Yorkshire, its communities and its people, and to improve and extend access to this information for all. In developing its capacity to handle digital archives, WYAS seeks to follow emerging national and international standards and best practice in the digital preservation field. In particular, WYAS aims to work within the framework of the Open Archival Information System (OAIS) reference model (ISO 14721:2003).

2. Audience

- West Yorkshire Joint Services Committee members
- WYAS staff responsible for collections development and collections management
- Data creators and curators within the five Metropolitan Councils of Bradford, Calderdale, Kirklees, Leeds and Wakefield
- Other organisations and individuals depositing digital resources with WYAS for archival preservation

3. Relationship with other West Yorkshire Archive Service Policies

This Digital Archives Policy should be read in conjunction with the West Yorkshire Archive Service Collection Policy, and Access to Records Policy.

4. Policy Context

The use of computers has changed forever the way information is created, managed and accessed. The ease with which digital materials can be generated, amended and copied, cross-searched, and transmitted rapidly via worldwide networks, has led to an exponential growth in the application of digital technologies in all walks of life.

Digital resources which might be selected for indefinite archival preservation come in a multitude of forms. Examples range from very simple text documents which reflect paper equivalents, to complex web-based resources combining text, sound, digital photographs or even moving images. Digital archives may be either static, like PDF documents, or dynamic, such as databases and web pages.

The content of digital archives is just as unique as any traditional document. But unlike paper and parchment records, which will survive extended periods provided basic environmental conditions are met, active management throughout the record lifecycle is required to ensure digital materials remain accessible and authentic.

5. Digital Preservation Management (Producer-Archive Interface)

WYAS recognises that digital preservation is a shared problem requiring a collaborative solution: WYAS records managers and archivists will work together with record creators, policy makers, information managers, ICT professionals and record users to better understand and define roles and responsibilities for the management and security of digital records at the different stages of their use, and for the associated costs. These relationships are explored in detail in the Producer-Archive Interface Methodology Abstract Standard (PAIMAS) (ISO 20652:2006).

WYAS expects to be involved in developing digital preservation strategies in conjunction with:

- Local authority and other statutory bodies operating within the former West Yorkshire Metropolitan County area, including the five Metropolitan Councils of Bradford, Calderdale, Kirklees, Leeds and Wakefield, West Yorkshire Joint Services and the West Yorkshire Police.
- Organisations which deposit archives with West Yorkshire Archive Service as an appointed Place of Deposit under the Public Records Acts of 1958 and 1967. These include West Yorkshire based National Health Service organisations, West Yorkshire Magistrates Courts and the Coroners Service.
- Private organisations, community groups and individuals.

Creators of digital records will require guidance on the creation and management of sustainable digital resources, including the need to use open and standard file formats wherever possible. WYAS will encourage good records management practice and provide advice to the owners of digital records in order to assist potential depositors of digital archives to create and curate records in a form which meets requirements for long-term preservation.

6. Accessioning and Ingest

'Ingest' is a term coined by the OAIS reference model to cover the processes by which data are submitted to and prepared for inclusion in a digital archives store. With regard to digital archives offered to WYAS this will include:

- Appraisal and evaluation of the digital records against the WYAS Collection Policy and the potential resource implications of accepting the deposit

- Licensing, copyright and other legal issues, such as legal admissibility
- Obtaining details on provenance, technical details of media and file formats, and other contextual information
- Secure transfer of digital records to the digital archives store
- Checking using checksums to detect signs of deterioration, or corruption during copying, and as a security measure to demonstrate the integrity of the digital record, and to ensure the data does not contain malicious executable code.

WYAS will develop guidelines and training for staff in the handling and care of digital archives offered to WYAS, together with deposit forms which record the information necessary for the preservation of digital material. WYAS will also conduct a survey of digital materials already held.

7. Digital Preservation Strategies

Maintaining access to digital resources over the long-term involves a continuing cycle of actions to safeguard storage media, actual content and contextual information ('metadata') from the threats of software and hardware obsolescence, malfunction and deterioration.

Various theoretical approaches to the preservation of digital content can be identified, including:

- Do nothing – print to paper or take no action beyond providing shelf space for the original storage media
- Technology preservation – keep all out-dated software and computer equipment

Doing nothing and technology preservation are generally seen as impractical and unacceptable approaches to digital preservation. As more and more records are 'born-digital', it is cheaper and more practical to preserve and store them electronically than any other way.

- Refresh – copy data to a new tape or disk of the same type
- Transfer – copy data to a more stable type of tape or disk

Refreshing and transfer will be an important part of the WYAS digital storage system. However, whilst backup and media refreshment may enable the preservation of the bit stream (sequences of 0s and 1s) that ultimately make up the information stored in any digital record, this does not ensure that the actual content represented by these bits can still displayed and used in the future.

- Emulation – using software that can pretend to be a different software or operating system or hardware configuration.
- Migration – converting the data into a newer or different file format, so that the information content remains accessible with each new generation of hardware and software. The costs of migration may be minimized by using standard formats which promote the interoperability of data.

WYAS will undertake further research to understand better the processes and costs involved in the sustainable management of digital archives, and to assess whether to manage digital archives in-house or to out-source WYAS's digital preservation management requirements to a specialist digital repository. WYAS's technical strategy

for the handling of digital archives will be developed in conjunction with other organisations working in the field of digital preservation.

8. Storage and Handling

WYAS recognises that good storage practice and handling all play an important role as a preventive preservation strategy for digital material, as they do for conventional documents.

Digital records may be stored on a variety of different media and each type has its own storage and handling needs. But all digital media should be stored in a cool, dry and stable environment away from direct sunlight and atmospheric pollutants such as dust and dirt. Magnetic media need additionally to be kept away from strong magnetic fields.

West Yorkshire Archive Service will work to establish a system to store digital archives for the long term, to include:

- Backup and media refreshment (periodic transfer of data from an existing tape or disk to a new tape or disk).
- Several copies of each digital resource being made available on different storage media in different locations, including off-site backup.
- Environmental conditions in storage for at least one of these copies which conform to the recommendations in BS 4783 and BS 5454:2000 for data storage media.
- Regular checks for physical signs of damage or degradation, and random checks for readability.
- Review of the West Yorkshire Archive Service disaster plan, in conjunction with West Yorkshire Joint Services ICT Department, in relation to digital archives. Emergency backup provision should not be dependant on the existence of the West Yorkshire Joint Services ICT network.

WYAS traditionally preserves physical objects which carry information. Digital preservation differs from the preservation of traditional materials in that it is largely concerned with preserving information regardless of the object on which that information is stored. WYAS will need to assess the archival ramifications of preserving only the digital bit stream, and consider potential scenarios in which it may also be desirable to retain the 'original' deposited media.

9. Access and Use

Once digital archives have been deposited with WYAS, a mechanism is required in order to make these resources accessible to users.

Here again, WYAS will seek to undertake further research to understand better the options and costs involved in providing access to digital archives. This will enable a more realistic assessment on whether to manage access to digital archives in-house or to out-source WYAS's requirements to a specialist digital repository.

Issues for consideration as regards access to digital archives will include:

- Information access legislation (see Access to Records Policy) and user authentication
- Access to intellectual content *versus* physical 'look and feel'
- Cataloguing and indexing – including the integration of finding aids for digital archives with the Service's existing CALM collections management database
- Technical support (how to read the digital record on the user's computer system)
- Archival content support (how to use and interpret the digital record)

WYAS's strategy for dissemination and access for digital archives will be developed in conjunction with other organisations working in the field of digital preservation, and other users of the CALM database system.

10. Review

Digital preservation is a new and rapidly evolving discipline. This policy is issued in June 2007 and will be reviewed and updated at least once every two years in the light of new research and expertise from other digital archives programmes.

Glossary of terms

- Born-digital – a record that was created in a digital format. Some born-digital records are also available in physical form *i.e.* have been printed to paper, but may lose some of their meaning as a result.
- BS4783 – Storage, transportation and maintenance of media for use in data processing and information storage.
- BS5454:2000 - Recommendations for the storage and exhibition of archival documents.
- Checksum – a technique for checking if digital data has changed during transmission, copying or storage. A unique serial number is calculated for each digital file, and is sent with the file when it is transmitted or stored with the data. After the data has been received or copied to disk, a new checksum is calculated and checked against the original one. If the two serial numbers are the same, the data has not changed.
- Hard copy – the printed output of information from a computer.
- Hardware - the parts of a computer that you can actually touch, such as the display screen, keyboard, disks and printer.
- Ingest – the set of processes by which data are submitted to and prepared for inclusion in a digital archives store.
- Metadata – contextual ‘data about data’. For instance, information about the author of the digital resource, file format and date of creation. Capturing and maintaining the correct metadata is increasingly being viewed as perhaps the key to the preservation of digital records.
- OAIS – Reference Model for an Open Archival Information System (ISO 14721:2003).
- OS or Operating System – the master control system that runs a computer. On most computers this is Microsoft’s Windows or the Macintosh OS. Linux is an operating system often used for digital preservation.
- PAIMAS – Producer-Archive Interface Methodology Abstract Standard (ISO 20652:2006).
- PDF - Portable Document Format. A particular type of file format which displays documents digitally in exactly the way in which they would appear on paper. A PDF file can be displayed on any computer which has the free Adobe Acrobat Reader installed. A standard format of PDF for long-term preservation, PDF/A, is defined in ISO 19005-1:2005.
- Software – coded instructions that tell a computer what to do.
- WYAS – West Yorkshire Archive Service.