



Archives West Midlands

Understanding digital preservation activities across the
West Midlands region

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Executive Summary

Digital Preservation looks specifically at the activities necessary to preserve, and to ensure continued long-term access to, digital material including digitised non-digital collections, information created as a digital publication and information created as part of the day-to-day business of an organisation. Unlike paper-based records digital material has a short life-span in which action can be taken to secure its accessibility. The volume, complexity and importance of data that is being produced digitally is growing on a huge scale and without establishing an approach and setting up standard procedures for effectively dealing with digital material, services may find themselves unable to deal with the sheer quantity they will be faced with in the coming years.

Inspired by consortium efforts to tackle the issue of digital preservation in other areas of the UK, colleagues from across the West Midlands region, who have previously acknowledged a shared struggle with progress in this area of work, are now seeking ways to work collaboratively to support individual services and to advocate for investment across the region. Uniting the services together is lead organisation Archives West Midlands (AWM). It is hoped that by collaborating as a region we can:

- Deliver greater efficiencies and savings by working together so we can continue to meet our objectives, even with reduced resources.
- Maximise the expertise of staff in the region to ensure services get the best return in investment.
- Save time and resources by sharing information and creating joint standards, guidelines and templates to use internally and to disseminate to depositors.
- Work together to increase our chances of attracting external funding and sponsorship.

Thanks to a successful application to The National Archives' Sustainability Fund and match-funding from Worcestershire Archive and Archaeology Service, an initial consultation has taken place across the region to assess the current levels of activity amongst participating services. A detailed survey was circulated to participating services and the results have been analysed to identify common areas of need.



Despite the best efforts of the services involved and the clear dedication of professionals across the region, a number of key priorities for progression have been identified as a result of this process, including:

- Provision of practical training and guidance for staff that can be directly applied to the workplace
- Development of basic templates for policies and guidance to be used across the region, including: digital preservation policies and strategies; metadata and file format guides; review of accession policies, with a particular focus on strengthening policies around the appraisal of digital material; production of guidance for depositors around the care of their digital records
- Investment to expand capacity within individual services
- Investment in a digital preservation system (for example, Archivematica or Preservica), that will help facilitate many of the processes involved in preserving digital material
- Investigating a platform to provide secure public access to digital records.

By seeking funding opportunities to address these priorities, and by working collaboratively in order to pool existing knowledge and resources, Archives West Midlands now has the opportunity to take significant steps towards helping to secure the digital heritage of the West Midlands.

1. Understanding the need for digital preservation

Digital Preservation can be described as 'the series of managed activities necessary to ensure continued access to digital material for as long as necessary'¹.

Digital materials include:

- Digitised non-digital collections

¹ Digital Preservation Coalition (DPC) 2008



- Information created as a digital publication
- Information created as part of the day-to-day business of an organisation

Digital materials pose extra challenges to repositories in terms of maintaining long-term access, because of the threats of technological obsolescence and physical deterioration that they face. The notable differences between paper-based and digital material which lead to these challenges are:

- Machine dependency – the requirement of specific hardware and software to access digital material
- Timeframe in which action needs to be taken – unlike paper-based material that can last centuries, advances in technology means the period in which action must be taken is reduced to only a few years, perhaps 2-5.
- Fragility of media – digital material is inherently unstable and without proper storage or management can deteriorate quickly even without appearing damaged.
- The need for changes to be made in order to manage digital material poses challenges to ensuring the integrity, authenticity and history of the records.
- There is a need for a continual programme of active management from the point of creation, therefore technology requires archives to adopt a life-cycle management approach in order to appropriately maintain digital material.

Although digital technology provides considerable opportunity for rapid and efficient access to information,

digital materials are created in such a way that even short-term viability cannot be assured and therefore there is much less prospect for access by future generations. Owing to the marked differences in the nature of digital materials as outlined above, there is a need for a very different approach to be taken in their management – one which is proactive and which is planned and reviewed at regular intervals.

There are a number of pressing reasons for action to be taken:



- Digital material will quickly become inaccessible. Loss of data will need to be justified to depositors and to other stakeholders with an interest or need for access to the material.
- Many services have statutory obligations to provide access to Public Records. More and more material is now born-digital and there is a need to accept deposits of records in this form; obligations will remain the same regardless of the format they are received in.
- If access to digital surrogates cannot be maintained beyond the short-term then it may be difficult to justify the initial, often substantial, investment in creating any digital resources.
- Retrospective preservation of digital material can be prohibitively costly or, in a worst case scenario, impossible due to media deterioration. It is widely acknowledged that the most cost-effective means of ensuring continued access is to consider preservation implications as early as possible, preferably at the creation stage.
- Digital material (images, documents etc) has value. This may be in terms of the value of reproducing that material for sale to users, whether onsite or remotely; or in terms of the value of its content for evidential purposes, especially where legal and regulatory compliance is implied.
- If access to digital material cannot be provided it could have a huge reputational impact for repositories (for example, if material is required for a Freedom of Information request and it is no longer accessible because the material has not been effectively preserved).

2. Background and objectives

Over recent years and during the course of informal discussions, colleagues from across the West Midlands region have acknowledged a shared struggle over an apparent lack of resources and funding preventing any significant progress in the vital work surrounding digital preservation. Whilst staff from all services are very keen to progress with this work



and are only too aware of its pressing importance, a lack of capacity has stalled progress for many.

It is widely acknowledged that the digital world is fast-paced by nature; the very real threat of technical obsolescence and the fragility of digital media mean that record repositories cannot be afforded the luxury of waiting for a better time to address the issue of securing their digital heritage. An additional impetus to take action comes from The National Archives' Archive Service Accreditation standard. A number of amendments to the application process have recently been agreed by the Accreditation Committee, as part of an intention to increase expectations surrounding the management of born-digital records. From April 2018 onwards the Accreditation application form will require services to evaluate their levels of digital preservation activity, using the National Digital Stewardship Alliance (NDSA) Levels of Digital Preservation as a guide. This marks a move towards a more detailed evaluation of digital preservation procedures.

The NDSA Levels are tiered to show how organisations can begin to build upon digital preservation activities, whether they are at the beginning of the process or are looking to enhance their already established procedures. Activities are organized into five functional areas: storage and geographic location, file fixity and data integrity, information security, metadata, and file formats². Please see **Appendix A** for the full NDSA Levels table, which shows the requirements for each level and reflects what services will be expected to self-evaluate against.

Inspired by consortium efforts to tackle the issue of digital preservation in Wales and the East of England, and facilitated by the gathering of professionals at regular Archives West Midlands (AWM) meetings, it was agreed that services within the West Midlands would investigate ways in which the region could potentially work together to encourage progress in this area. AWM made an application to The National Archives' Sustainability Fund for support to allow an initial consultation to take place across the region, along with the

² National Digital Stewardship Alliance, Levels of Preservation: <http://ndsa.org/activities/levels-of-digital-preservation/>



preparation of a report into the current levels of activity amongst participating services. This application was successful and, with match-funding from Worcestershire Archive and Archaeology Service, has allowed these early stages of investigation to begin.

It is hoped that by working collaboratively as a region we can:

- Deliver greater efficiencies and savings by working together so we can continue to meet our objectives, even with reduced resources.
- Maximise the expertise of staff in the region to ensure services get the best return on investment.
- Save time and resources by sharing information and creating joint standards, guidelines and templates to use internally and to disseminate to depositors.
- Work together to increase our chances of attracting external funding and sponsorship.

The survey used to build this report was designed to assess the readiness of services across the West Midlands to successfully carry out digital preservation activities. The questions provided sought to gather both qualitative and quantitative data from each respondent, which would allow identification of any apparent common areas of need across the region. By gathering a detailed overview of the current position of services in the region we hope to explore approaches that will enable us to make significant progress together.

3. Survey method

In order to analyse the current levels of digital preservation activities within archive services across the region, a survey was circulated to subscribed members of Archives West Midlands who had expressed an interest in exploring a collaborative regional approach. A total of 11 services were surveyed, which included Local Authority, Cathedral, University and Charity archives.

The survey was prepared to reflect the recommendations of the NDSA Levels, along with additional questions which incorporate the recommendations put forward by the [DigCurV](#)



[Curriculum Framework for Digital Curation](#); the guidance provided by the Digital Preservation Coalition's [\(DPC\) Handbook](#), and elements of the draft Skills Audit kindly shared by the team behind the [Digital Preservation at Oxford and Cambridge project \(DPOC\)](#) ahead of its publication due in late 2017.

Please see separate **Appendix B** for a copy of the survey as circulated to members.

4. Survey findings

The responses submitted to the AWM survey provide strong evidence of a clear commitment across the region to secure the digital heritage of the West Midlands. It is apparent, however, that there are a number of factors that are preventing substantial progress in this field. The following analysis will look at the responses of participants, grouped into broad categories where areas of particular need have been identified.

Staff training, skills and understanding

All respondents to the survey acknowledged that digital and physical records are equally important, whilst 10 out of 11 services reported feeling they have the support of senior management within their service or parent organisation. This is a positive and notable result for the region, as gaining the buy-in of senior management can often be one of the biggest challenges early on in establishing digital preservation procedures. Likewise, a lack of understanding of the importance of adopting new approaches and procedures, that perhaps move away from the more traditional archival skillset, to effectively deal with digital records can sometimes be a barrier in preventing progress. These results suggest that advocacy within individual services is already showing signs of success and that attitudes towards digital material are not necessarily hindering the work in principle.

Ten out of 11 survey respondents reported that staff within their service have already received some form of training in digital preservation, which includes courses provided by the Digital Preservation Coalition; ARA core training and DPTP courses. Despite these results, 9 out of the 11 respondents reported that staff within their service feel unprepared to deal with digital preservation activities with regards to skills and training. Further



comments provided by participants show that perceived gaps in skills and training relate particularly to practical experience of managing digital records. Many of the training courses attended to date by the region focus on the early stages of digital preservation and building advocacy in order to gain buy-in of senior management. The responses analysed earlier suggest that, where received, this training has been advantageous and the principles have been applied in the workplace, however; it is clear that further guidance is required and practical training applicable to the workplace would be most advantageous.

Priority 1: As practical experience and training is overwhelmingly identified as an outstanding need, it is proposed that the region investigates possible ways to work together to undertake practical training and/or develop practical skills that are directly applicable to workplaces across the region.

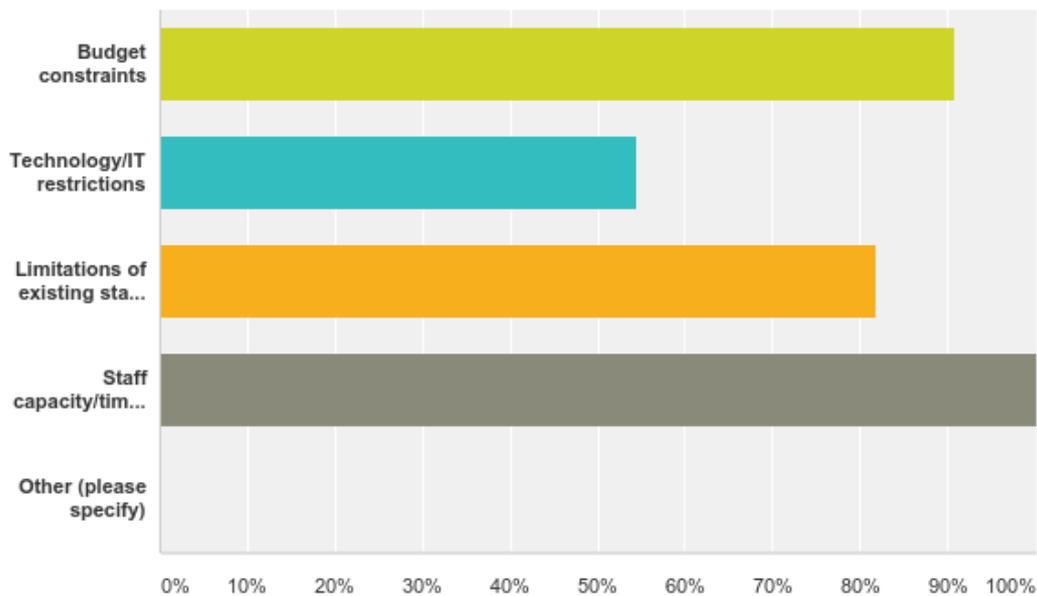
Capacity and budgets

Whilst it is clear that attitudes towards digital records are not a limiting factor, it is still evident that services are not making the progress they wish to. So what are the issues preventing progress in digital preservation activities? Survey respondents were asked to select all factors that they felt were contributing to their lack of progress, with the options: budget constraints; technology/IT restrictions; limitations of existing staff skills/knowledge/confidence or staff capacity/time to do the work. Figure 1 below illustrates the responses.

Figure 1

Q4 What factors, if any, do you feel are currently holding you back from progressing with digital preservation activities within your service? (tick all that apply)

Answered: 11 Skipped: 0



100% of respondents felt that staff capacity and time to do the work was a factor preventing them from progressing with digital preservation activities. This is closely followed by 10 out of the 11 respondents who felt that budget constraints were a factor at play. This result correlates well with the findings from question 6, which showed that only 1 survey respondent has specific project funding in place to cover sustainable digital preservation activities. The remaining 10 services reported either having no funding in place or attempting to cover the work with existing resources.

The responses showing staff time as a limiting factor suggest that investment to provide additional staff capacity for digital preservation activities would go a long way towards facilitating real progress in this area of service provision.



Staff skills, knowledge and confidence also ranked high amongst respondents, with 9 services reporting this as a limiting factor. Six of those surveyed also reported IT and technology restrictions as being a contributing factor. No additional issues were provided by respondents as reasons for lack of progress with digital preservation, which suggests that the factors provided cover the majority of problems encountered.

It is clear that additional capacity, whether from core or external funding, is required within the region to allow for real progression with digital preservation activities. Many services are now operating on significantly reduced budgets, which means existing staff are already stretched to capacity. Digital Preservation presents an additional workload for services in its early stages, so for many additional investment would be the only option to allow work to get underway.

Priority 2: It is proposed that the region seeks funding opportunities for a post to work cross-regionally to investigate ways in which AWM can act as a combined body of support for individual services and use its research results to advocate for additional investment across the region, with a particular focus on increasing capacity where required.

Policies, procedures and service guidance

Four out of 11 respondents reported having a digital preservation policy and 3 out of 11 reported having a supporting digital preservation strategy. The remaining respondents reported currently having neither of these documents. It is widely acknowledged that these documents are vital in guiding the work of a service, to ensure a consistent approach and to gain the buy-in of senior management.

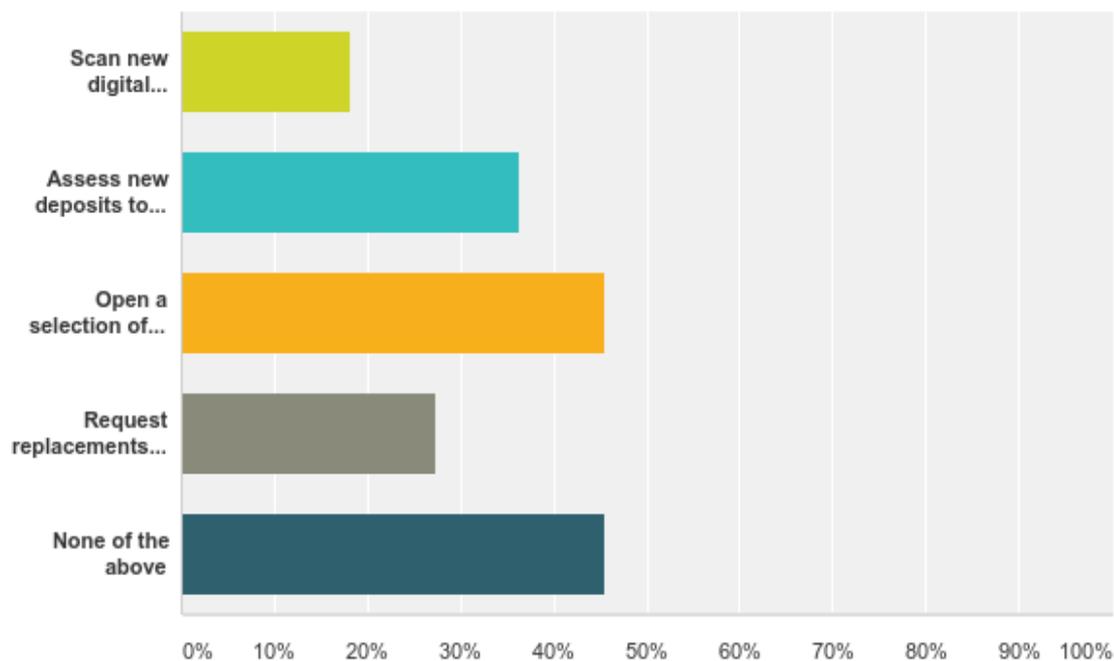
Priority 3: Whilst acknowledging that each service will have distinct requirements, it would be beneficial for existing documentation to be shared across the region. It is proposed that AWM investigates funding opportunities for a post to develop policies and procedures that could form a basic template across the region. This would allow for sharing of best practice and would also enable services to save time, rather than forming their own policies and strategies.

Services were asked to identify the processes they are currently performing on digital deposits they take into their care, with the options: scan new digital deposits for viruses and malware upon receipt; assess new deposits to check that all expected files are present against pre-agreed lists; open a selection of digital files to verify their integrity/check for damage at point of accessioning and request replacements for damaged or missing files at the point of accessioning digital material. The responses are shown in Figure 2 below. These results highlight that there is a clear need to further develop procedures within services across the region. None of the respondents reported performing all of these procedures, and 5 stated that they are not currently performing any of these processes.

Figure 2

**Q14 Which of the following processes do you currently perform on digital deposits?
(Please tick all that apply)**

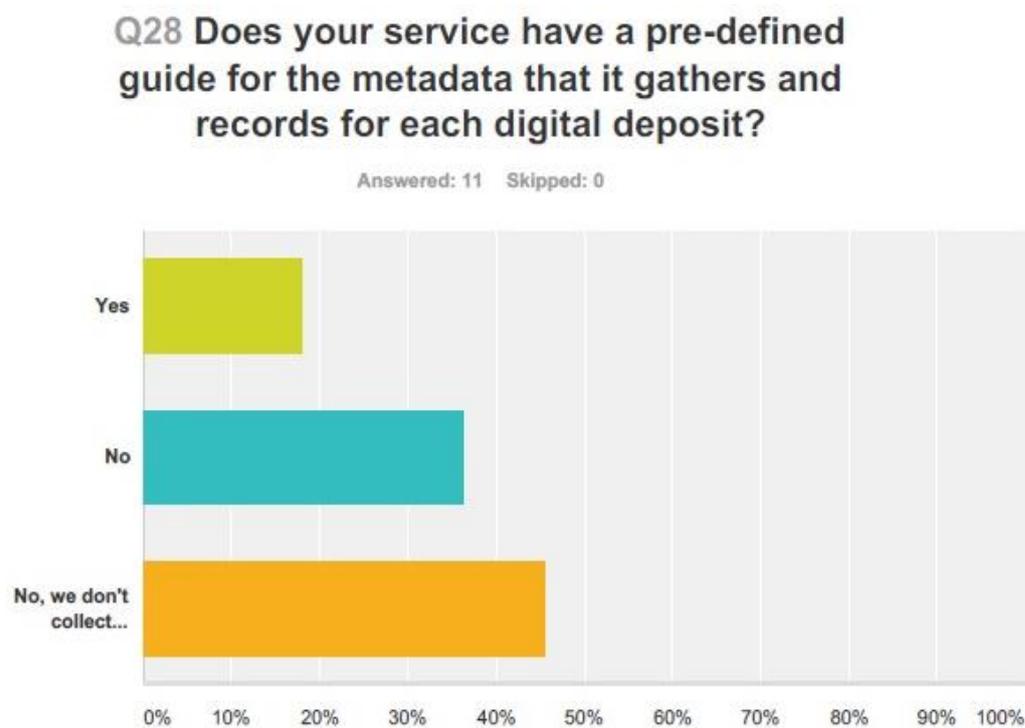
Answered: 11 Skipped: 0



Metadata

As shown in Figure 3 below, only 2 of the services surveyed have a pre-defined guide for the metadata they gather, whilst 4 collect without a guide and the remaining 5 are not currently collecting any specific metadata. This raises concerns that services may be missing out on capturing vital information at the point of deposit, which they may struggle to retrospectively obtain at a later date.

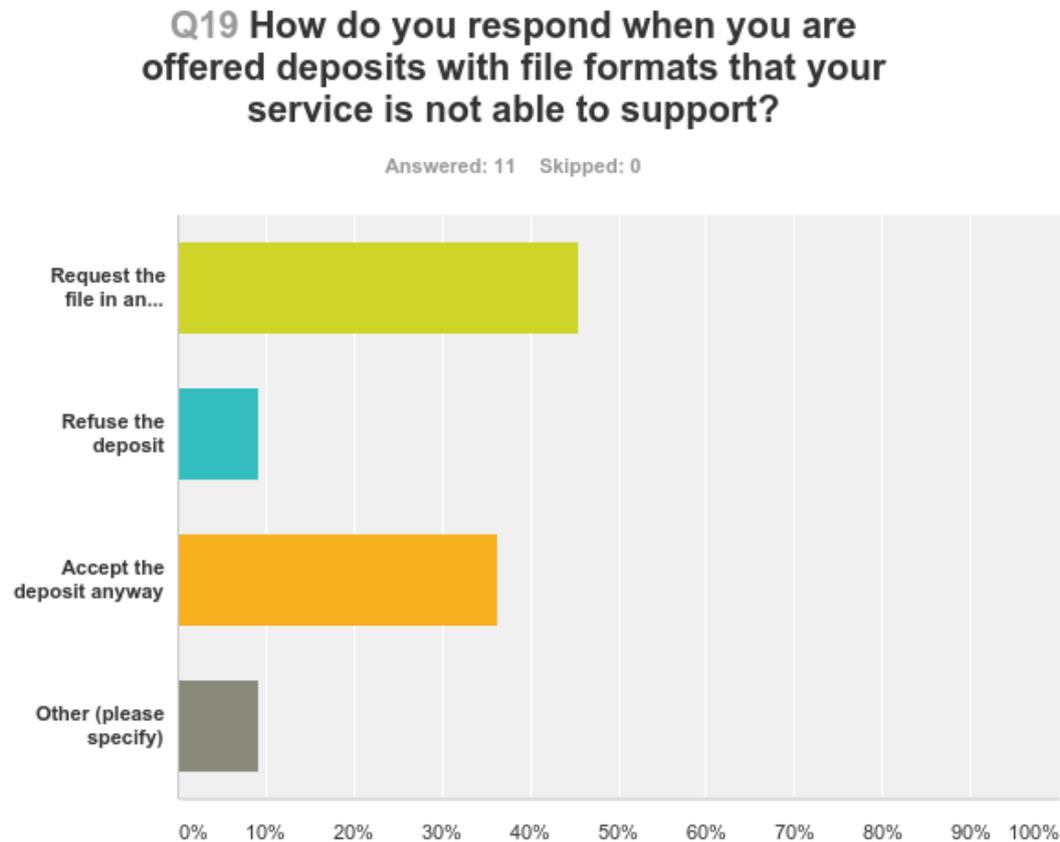
Figure 3



File formats

It is recommended that the range of formats in use by a service be consolidated in order to minimise duplication and eliminate problematic formats. This is a process known as normalisation. Five respondents reported that they do not have a list of preferred file formats that they accept in deposits. The remaining 6 respondents either have such a list or are currently working towards one. The survey then asked how services respond to deposits that contain formats they cannot support, the results of which are shown in Figure 4 below.

Figure 4



This figure shows that when faced with depositors offering file formats their service is not able to support, 4 out of 11 services stated they would accept the deposit anyway. This highlights potential future problems services may encounter if they take in formats they cannot process. In addition to these results none of the respondents reported having procedures in place to monitor or deal with file format obsolescence. Without proactive management of this issue services may find themselves with large numbers of deposits that they are no longer able to support.

Priority 4: Seek funding for a post that could research and prepare predefined guides and procedures for use across the region. This would save time for individual services and would provide the opportunity to create benchmark standards across the region, building



confidence amongst staff that they are working consistently alongside others in the profession

Long-term maintenance of digital material

The survey findings have highlighted that the long-term maintenance of digital material across the region appears to be an area of particular concern requiring attention.

Three out of the 11 services surveyed do not currently have any secure copies of their digital material maintained and have only the original media stored in strongrooms. Deterioration of digital media could lead to the permanent loss of these records if they continue to be unsecured.

Even amongst the services that are ingesting and holding copies of their digital records on secure servers, it is clear that the long term security and stability of these records is not assured. In order to check over time that digital files are being preserved, it is necessary to record exactly what files one has in their possession. It is therefore important to create a Verifiable File List, which includes file names, locations, sizes, format and checksums. This list will allow you to check the 'fixity' of your files over time. "Fixity, in the preservation sense, means the assurance that a digital file has remained unchanged, i.e. fixed."³ A total of 9 out of 11 respondents reported not having a Verifiable File List, whilst only one of the 11 services surveyed are periodically checking the fixity of their records

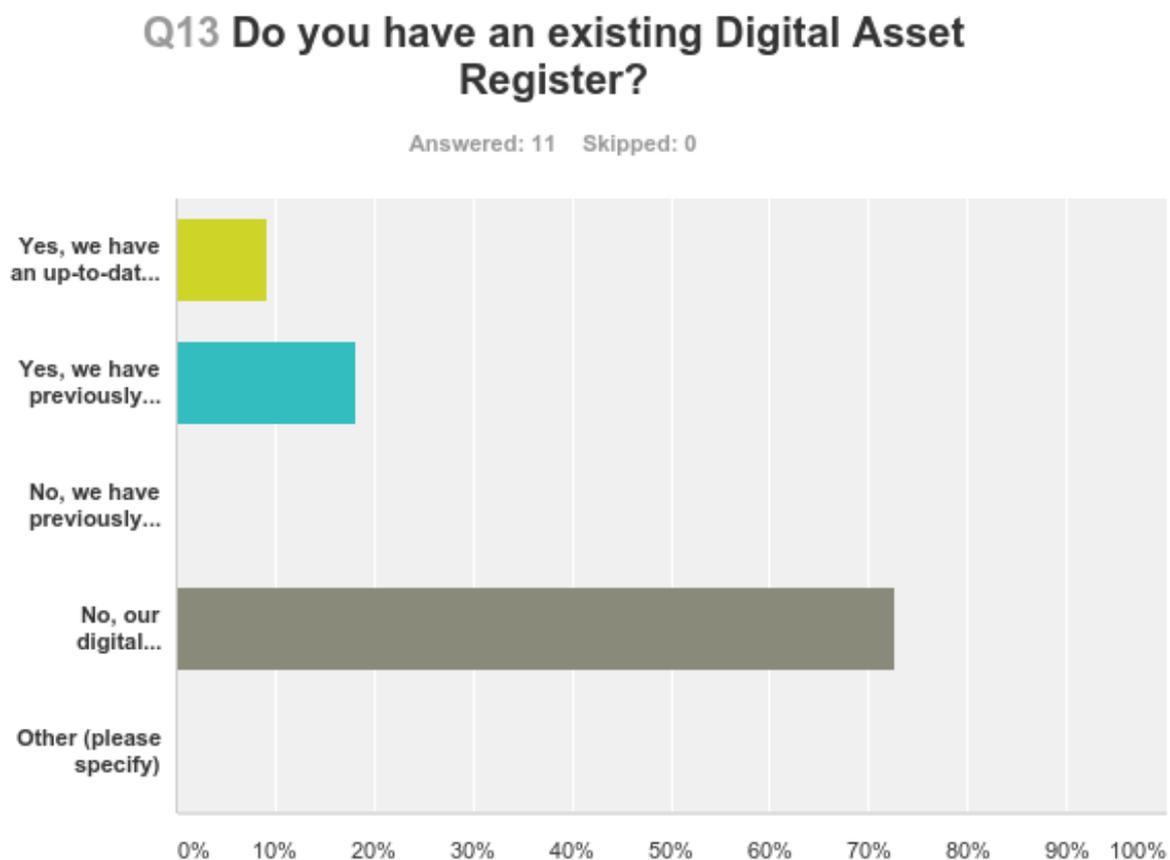
Seven out of 11 respondents do not have a Disaster Recovery Plan that covers digital records, which potentially leaves any digital material currently held open to future risk.

Figure 5 below shows that only one repository reported having an up-to-date digital asset register, with a further two stating they have previously compiled one but no longer maintain it. Eight respondents have no separate record providing details of their digital holdings.

³ Bailey, 2014 <http://dpconline.org/handbook/technical-solutions-and-tools/fixity-and-checksums#ref>

A digital asset register is a document or database where services can systematically record all of their digital content. The information about the file formats and software used, along with where and how data is stored, can help repositories to assess risk. Assessing risk can help to highlight specific threats to the continuity of digital resources, and even the most basic of assessments will highlight priorities for getting started in digital preservation. Risk assessment can also be useful for helping to make a case for investment to senior management. Despite these benefits, none of the survey respondents reported having undertaken a risk assessment.

Figure 5



Priority 5: Given the areas of potential future risk highlighted above and the benefits of risk assessments in advocating support for investment, it is proposed that the region investigates funding, or finds ways of supporting each other, to undertake risk assessments

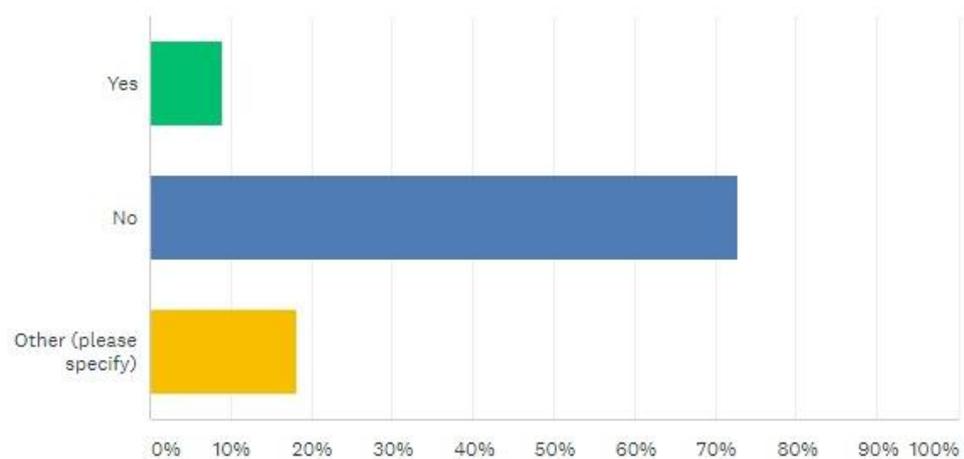
within individual services. Various models exist for reference, including The National Archives' risk assessment tools, [DRAMBORA](#) and [SPOT](#). Production of Digital Asset Registers by all services would facilitate the risk assessment process.

Acquisitions and appraisal

Figure 6

Are you currently proactively collecting digital material?

Answered: 11 Skipped: 0



As shown in Figure 6 above, only one service stated that they are proactively collecting digital material; 2 stated that they are doing so for particular record types only, whilst eight out of 11 services are not currently proactively collecting any digital deposits. This issue is further compounded by the fact that eight out of 11 services are not currently able to provide specific guidance to depositors regarding their digital material. This highlights a particular area of concern in that services may well find that there are significant gaps in their collections in years to come.

A particularly significant result of this survey is that none of the services questioned felt that their current acquisitions or collections policy covers digital material to a sufficient extent to allow for the necessary appraisal of digital collections. This suggests that as a region we may



be taking in volumes of records that we later find ourselves unable to effectively process, which is an alarming prospect.

Priority 6: It is suggested that the region seeks funding for a post to investigate ways that it can work together to develop depositor guidance in order to facilitate proactive collection of digital material across the region. It is also proposed that a collaborative approach is taken towards reviewing accessioning policies to reflect the necessary appraisal of digital material.

Provision of access

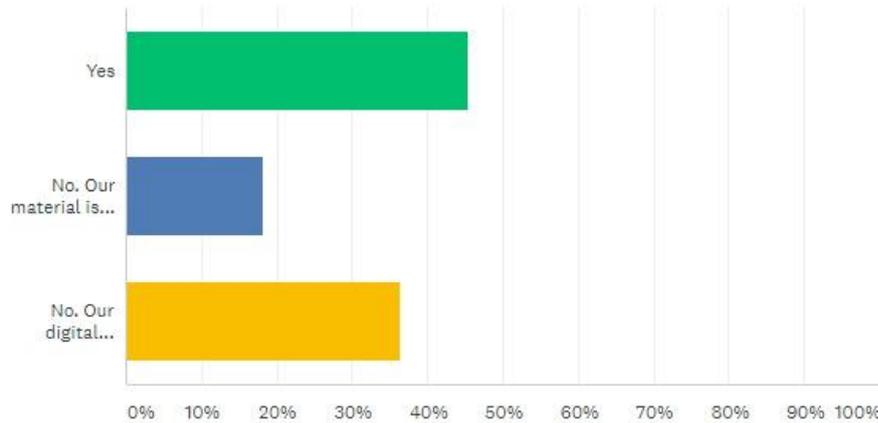
Five out of 11 respondents reported that they currently have no means of providing access to their digital collections; one service is working on restoring previously available access and two services can provide access to limited parts of their collections. Only three services reported provision of access to all of their digital collections.

Figure 7 below show the responses regarding publicly accessible catalogues for digital material.

Figure 7

Are your digital collections available to search via publicly accessible catalogues, finding aids or inventories?

Answered: 11 Skipped: 0



ANSWER CHOICES	RESPONSES
Yes	45.45% 5
No. Our material is catalogued but not publicly accessible, though we hope to make these available in the future	18.18% 2
No. Our digital material is not currently catalogued or accessible	36.36% 4
TOTAL	11

Five services are able to provide searchable catalogues or finding aids for their digital material and a further two services have catalogues they hope to make available in the future. Four services reported that their digital material is not currently catalogued or accessible.

Five respondents stated that they have no provisions in place to restrict access to sensitive material within their digital collections, however, it should be noted that this corresponds with the number of services currently without catalogues. This reassuring result suggests that those with publicly accessible catalogues are confident that they are successfully securing their material.

Priority 7: Investigate funding sources that would allow AWM to seek a regional solution to providing secure access to digital material.



Looking towards a regional solution

Those surveyed were asked what they hope to get out of a regional approach to digital preservation, the responses to which are provided below:

Shared knowledge and skills and a network of support. Sharing the costs so that it is affordable and sustainable.
Shared standards and best practice; ensuring specialisms across the region were identified and that we work more closely together to support/partner on projects.
A regional solution might offer a more cost effective solution to digital preservation by combining the limited resource available at each office. This would need to be a flexible and adaptable solution to allow it to run smoothly alongside varying practices and procedures in operation at the various offices.
A community of support to share ideas/solutions; explore options for shared storage or software.
We hope that a regional approach might give us more leverage when attempting to get IT buy-in. A support network and potential pooling of resources, including policy documentation, depositor guidance; accessioning and weeding guidance, including file format lists; common metadata standards and practical training. Most importantly, we hope to have a strengthened position to apply for funding that will allow us to obtain a digital preservation system, e.g. Preservica, so that we can get underway with this work.
Support network for best practice; sharing IT resources
Achieving a mechanism to preserve digital information long term.
Shared knowledge and pooled resources providing a workable solution going forward.
Sharing the cost, sharing knowledge and skills (e.g. writing guidelines, achieving best practice). Having a support network.
The ability to draw on expertise and experience that we do not possess.
A regional solution for storage of digital material - cloud-based system.



Eight out of the 11 respondents reported being open to the idea of having their digital material hosted by another service or by a third party as part of a regional repository, whilst two were unsure of this idea. One respondent reported that they would only be willing to host in-house, owing to the nature of their collections.

5. Recommendations

Analysis of the survey responses has led to identification of some clear priorities for the West Midlands region, which if addressed would allow for significant progress for the individual services concerned. It is evident that there is already a clear understanding of the need to make advances with this work, however, the limited capacities of services struggling with current budget provisions and a perceived skills gap in the region mean that progress has been limited or is stalling for many.

Archives West Midlands has the opportunity to act as a combined body of support that draws together the expertise of professionals from right across the region. Under the guidance of AWM, services have the chance to gather together and work as a cohesive body that use these research results to advocate for investment across the region and to encourage collaborative approaches to working. It is hoped that a joined up approach to digital preservation will put members of AWM in a stronger position than they would otherwise occupy as individual services and that together an effective support network can be built.

Increasing the capacity of individual services is necessary in many ways, particularly to allow for Digital Asset Registers and Verifiable File lists to be compiled, but also, crucially, for risk assessments to be prepared. This may be performed in-house or it may be suitable for a project post to undertake this work across the region.

It is proposed that AWM investigates funding opportunities for a post to work cross-regionally to develop policies and guidance that could form basic templates for use by all services. Whilst acknowledging the distinct requirements each service will have, it is evident



that there are a number of areas where time could be saved for individuals by pooling resources and sharing best practice. Key documentation that could be covered by such a post include: digital preservation policy and strategy; metadata and file format guides; accessioning policy review, with a particular focus on strengthening policies around the appraisal of digital material, and finally the production of guidance for depositors around the care of their digital records.

Practical training for staff is still a key requirement for most services across the West Midlands and this is something that AWM should investigate as a priority.

Finally, it is recommended that AWM investigates investment in digital preservation systems that could facilitate many of the processes involved in preserving digital records. Systems such as Preservica and Archivematica provide the option for services to work together on a consortium basis, and this raises an opportunity to obtain these systems at reduced rates. This may give individual member services the chance to invest in systems they might not otherwise afford. Opportunities are available to explore these systems further and it is recommended that AWM investigates these possibilities in more detail.

The findings of this report will be used to assess the level of digital preservation activities across the region and Archives West Midlands will consider their priorities for action moving forwards.



Appendix A – NDSA Levels of Preservation⁴

	Level One (Protect Your Data)	Level Two (Know Your data)	Level Three (Monitor Your Data)	Level Four (Repair Your Data)
Storage and Geographic Location	Two complete copies that are not co-located For data on heterogeneous media (optical disks, hard drives, etc.) get the content off the medium and into your storage system	At least three complete copies At least one copy in a different geographic location/ Document your storage system(s) and storage media and what you need to use them	At least one copy in a geographic location with a different disaster threat Obsolescence monitoring process for your storage system(s) and media	At least 3 copies in geographic locations with different disaster threats Have a comprehensive plan in place that will keep files and metadata on currently accessible media or systems
File Fixity and Data Integrity	Check file fixity on ingest if it has been provided with the content Create fixity info if it wasn't provided with the content	Check fixity on all ingests Use write-blockers when working with original media Virus-check high risk content	Check fixity of content at fixed intervals Maintain logs of fixity info; supply audit on demand Ability to detect corrupt data Virus-check all content	Check fixity of all content in response to specific events or activities Ability to replace/repair corrupted data Ensure no one person has write access to all copies
Information Security	Identify who has read, write, move, and delete authorization to individual files Restrict who has those authorizations to individual files	Document access restrictions for content	Maintain logs of who performed what actions on files, including deletions and preservation actions	Perform audit of logs
Metadata	Inventory of content and its storage location Ensure backup and non-collocation of inventory	Store administrative metadata Store transformative metadata and log events	Store standard technical and descriptive metadata	Store standard preservation metadata

⁴ National Digital Stewardship Alliance, Levels of Preservation: <http://ndsa.org/activities/levels-of-digital-preservation/>



File Formats	When you can give input into the creation of digital files encourage use of a limited set of known open file formats and codecs	Inventory of file formats in use	Monitor file format obsolescence issues	Perform format migrations, emulation and similar activities as needed
Access	Determine designated community ¹ Ability to ensure the security of the material while it is being accessed. This may include physical security measures (e.g. someone staffing a reading room) and/or electronic measures (e.g. a locked-down viewing station, restrictions on downloading material, restricting access by IP address, etc.) Ability to identify and redact personally identifiable information (PII) and other sensitive material	Have publicly available catalogues, finding aids, inventories, or collection descriptions available to so that researchers can discover material Create Submission Information Packages (SIPs) and Archival Information Packages (AIPs) upon ingest ²	Ability to generate Dissemination Information Packages (DIPs) on ingest ³ Store Representation Information and Preservation Description Information ⁴ Have a publicly available access policy	Ability to provide access to obsolete media via its native environment and/or emulation