Question: *Current Strategies/Technologies: What strategies do archivists employ; what technologies are being utilized? Identify and survey the relevant literature.*

Our subgroup surveyed the professional literature to identify current technologies in use to provide access to electronic records. One member, Rachel Muse, focused specifically on the government sector, compiling a list of websites created and maintained by the fifty US states to provide access to e-records for their constituents (see page 5). She found that the States usually won't have the same level of direction concerning specific technologies in use, but the sites give us a broad sense of what kind of guidance state archives and records management programs are providing to records creators. The big trends she identified in these policies and guidance documents were: 1) placing the responsibility on the records creator to provide access to electronic records, 2) reminding creators that electronic records are subject to the same access laws as any other records, and 3) providing requirements or recommendations for electronic recordkeeping systems to agencies and other records holders. Very rarely is a specific technology mentioned. While nearly all of the states have digitized and/or born-digital electronic records available through their websites, very rarely did they provide (on the website) information about the technology in use.

We identified thirty-three articles (see bibliography, page 9) that discussed electronic records, ranging in date from 2002 to 2014, in corporate, government, university/academic, and private institution settings, in the United States, Great Britain, and Australia. However, as Shein (2014) notes: "While publications on technologies and methodologies facilitating the management of born-digital materials are more prevalent than they were five years ago, a significant gap in the literature remains in reference to repositories providing access to born-digital special collections and archives, particularly in regard to providing online public access." (5)

While many articles did not provide specific access technologies or strategies, most stressed that access is the logical and desired end result of collecting or capturing electronic records and that as such access should be part of the initial and subsequent discussions and planning with donors, staff, and stakeholders. However, these articles make it clear that significant barriers to access exist, including not only limited resources for staffing and technology, but just as importantly, concerns about privacy, confidentiality, and copyright. Many institutions employ restricted access to born-digital material that ranges from complete embargoes of collections to

free open access on the web. The majority of articles seem to reflect a middle ground with access provided on dedicated workstations (Emory) or virtual readings rooms that only allow access to approved researchers (UC San Diego). It is clear from a review of the literature that free, restricted access to born-digital materials is not prevalent in the profession and may not be desirable or possible because of legal and ethical issues.

We also considered the **AIMS report** (AIMS Born-Digital Collections: an Inter-Institutional Model for Stewardship), which provides models for access and discovery of born-digital material. These models outline the current methods of access currently employed by institutions with the variety of tools summarized in our technology summary.

Elements of Access: (from AIMS model)

1) Data Format
   - Original data/media
   - Emulated environment
   - Migration version
   - Disk image
2) User Location
   - In-person/on-site
   - Remote access
3) User authentication
   - non-authenticated
   - authenticated
4) Retrieval/generation of content
   - static (access version generated without user request)
   - dynamic (access copies generated upon user request)
5) Restriction level
   - Discover
   - View
   - Render
   - Download

Discovery Models

1) Discovery through metadata only
2) Discovery through content only (no metadata, but full text of content is searchable although does not mean that content is accessible)
3) Discovery through content plus metadata

Technologies mentioned in the literature:

While most articles do not focus on the specific technology or platform used, some technologies are mentioned at least briefly in the literature. Some of these are used primarily for digitized records, while others are used for born-digital records. Technologies include:

<u>Open source repository & DAM software</u>

[Fedora Commons](#) (Prom; Baker)
Open source software supported by DuraSpace based on the Fedora (Flexible Extensible Object Repository Architecture) Digital Asset Management architecture. It is "a robust, modular repository system for the management and dissemination of digital content. It is especially suited for digital libraries and archives, both for access and preservation."
(http://www.duraspace.org/about_fedora)

[DSpace](#) (Zach & Perry)
Open source repository software package. Focused on long-term storage, access and preservation of digital content.

[Archivematica](#) (Misra)
Open source digital preservation system. Used with web-based content management system AtoM to provide access.

[Greenstone](#) (Zach & Perry)
Open source software suit for building and distribution digital library collections produced by the New Zealand Digital Library Project.

<u>Commercial repository & DAM software</u>

[CONTENTdm](#) (Zach & Perry; Zhang & Mauney; Kirschenbaum)
Commercially available DAM system. Supports upload, description, access, and management of digital collections.

[ExLibris Rosetta](#) (Shein)
Digital preservation system; appears to be more born-digital focused than the company's DigiTool software.

[ExLibris DigiTool](#) (Shein)
"Enables academic libraries and library consortia to manage and provide access to digital resources." (http://www.exlibrisgroup.com/category/DigiToolOverview)

[Luna Insight](#) (Keough & Wolfe)
Commercial digital asset management. Used at the [University of Colorado Digital Library](#).

Other Supporting Technologies

Dublin Core (Prom)
Metadata standard for describing resources

SheepShaver (Carroll)
Open source PowerPC Apple Macintosh emulator.

DIMAC (Misra)
Disk Image Access for the Web – which can be of use to end users of the materials – as well as LAM professionals – to analyze the data contained in the digital media.

OSFMount (Misra)
OSFMount allows you to mount local disk image files (bit-for-bit copies of a disk partition) in Windows with a drive letter.

BitCurator (Misra)
The BitCurator Environment is built on a stack of free and open source digital forensics tools and associated software libraries, modified and packaged for increased accessibility and functionality for collecting institutions.

Email Archive Explorer (Kang)

NetLens-Email (Kang)

PDF (Light 2014; Carroll) / PDF-A (Light 2010)

Internet Archive (Prelinger)
The Internet Archive is a 501(c)(3) non-profit that was founded to build an Internet library. Its purposes include offering permanent access for researchers, historians, scholars, people with disabilities, and the general public to historical collections that exist in digital format.

FDLP servers (Kumar)
The Federal Depository Library Program (FDLP) Web Archive is comprised of selected U.S. Government Web sites, harvested and archived in their entirety by the U.S. Government Printing Office (GPO) in order to create working "snapshots" of the Web sites at various points in time. The aim is to provide permanent public access to Federal Agency Web content. GPO harvests and archives the Web sites with Archive-It, a subscription-based Web harvesting and archiving service offered by the Internet Archive.

Digital Access Documentation at State Archives

1) Alabama Department of Archives and History: Procedural Leaflet: Providing Access to Government Records, 2002 (http://www.archives.alabama.gov/officials/access.pdf)

2) Alaska State Archives: None identified.

3) Arizona State Library, Archives and Public Records: Collection Development Training Selection: Electronic & Internet Resources (http://apps.azlibrary.gov/cdt/slrer.aspx)

4) Arkansas History Commission and State Archives: None identified.

5) California State Archives: Trustworthy Electronic Document or Record Preservation (http://www.sos.ca.gov/admin/regulations/tech/trustworthy-electronic-doc-or-record-preservation.htm)

6) Colorado State Archives: Department of Personnel & Administration Colorado Open Records Act Policy, 2013 (https://www.colorado.gov/pacific/sites/default/files/2012-05%20DPA%20CORA%20Policy%20(rev%20032813).pdf); Guidelines for Long-Term Preservation of Records (https://www.colorado.gov/pacific/sites/default/files/GUIDELINES_FOR_LONG_TERM_PRESERVATION_OF_RECORDS_0.pdf)

7) Connecticut State Archives: None identified.

8) Delaware Public Archives: None identified.

9) State Archives of Florida: Electronic Recordkeeping Strategic Plan, 2009 (http://dlis.dos.state.fl.us/recordsmgmt/pdfs/ElectronicRecordkeepingStrategicPlan2010-2012.pdf); Chapter 1B-26.003, Florida Administrative Code, Records Management – Standards and Requirements – Electronic Recordkeeping, 2008 (http://dlis.dos.state.fl.us/barm/rules/1B26_003FAC.cfm); Electronic Records and Records Management Practices, 2010 (http://dlis.dos.state.fl.us/barm/handbooks/electronic.pdf)

10) The Georgia Archives: Preferred Practices for Historical Repositories: A Resource Manual, 2010 (http://www.georgiaarchives.org/documents/ghrac/GHRAC_Preferred_Practices_Manual.pdf)

11) Hawaii State Archives: Comptroller's Circular No. 2001-02: Policy and Guidelines Relating to Electronic Records Retention and Disposition, 2001 (http://ags.hawaii.gov/wp-content/uploads/2012/09/Comp-Cir-2001-021.pdf);
Hawaii Digital Archives Plan, 2012, (http://ags.hawaii.gov/wp-content/uploads/2012/09/Hawaii-Digital-Archives-Master-Plan.pdf);

State of Hawaii DRAFT Recordkeeping Metadata Standard, 2006 (http://ags.hawaii.gov/wp-content/uploads/2012/09/HI_metadata_9-14-2006-final.pdf)

12) Idaho State Archives: Guidelines for Digitalization in State of Idaho Government Agencies (http://history.idaho.gov/sites/default/files/uploads/digitalization_standards_0.pdf); Office of the Attorney General Idaho Public Records Law Manual, 2011 (http://history.idaho.gov/sites/default/files/uploads/PublicRecordslaw_0.pdf**)**

13) Illinois State Archives: Database Transcription Policy (http://www.cyberdriveillinois.com/departments/archives/databases/transcription_policy.html); Long Range Plan for the Use of Library Services and Technology Act Funds in Illinois, 2012 (http://www.cyberdriveillinois.com/departments/library/grants/pdfs/lstalongrangeplan.pdf)

14) Indiana State Archives: Electronic Records Policy OCPR Policy #12-01, 2012 (http://www.in.gov/icpr/files/policyelectronicrecords.pdf)

15) Iowa State Archives: None identified.

16) Kansas State Archives: Kansas Electronic Records Management Guidelines (http://www.kshs.org/p/kansas-electronic-records-management-guidelines/11331) KEEP (Kansas Enterprise Electronic Preservation) System Policy Framework Version 1.0, 2010 (http://keep.ks.gov/wp-content/uploads/2010/09/KEEP_Policy_Framework_accepted_ver1.0_web.pdf)

17) Kentucky Department for Libraries and Archives: None identified.

18) Louisiana State Archives: Administrative Rules for Records Management Policies and Practices, 2003 (http://www.sos.la.gov/HistoricalResources/PublishedDocuments/RecordMgmtPoliciesPracticesAdminRules.pdf)

19) Maine State Archives: None identified.

20) Maryland State Archives: None identified.

21) Massachusetts Archives: Electronic Records Management Guidelines, (http://www.sec.state.ma.us/arc/arcpdf/Electronic_Records_Guidelines.pdf)

22) Archives of Michigan: None identified.

23) Minnesota State Archives: Electronic Records Management Guidelines, 2012 **(**http://www.mnhs.org/preserve/records/electronicrecords/erguidelines.php)

24) Mississippi Department of Archives and History: None identified.

25) Missouri State Archives: Digital Imaging Systems Guidelines, 2001 (http://www.sos.mo.gov/records/recmgmt/DIGuidelines.pdf); Missouri Local Government Records Management Guidelines, 2013 (http://www.sos.mo.gov/records/recmgmt/MoLocGovRecMgmtGuides.pdf)

26) Montana State Archives: A Review of Previous Strategic Planning Efforts for Electronic Records Management, 2013 (http://leg.mt.gov/content/Committees/Interim/2013-2014/Education-and-Local-Government/Committee-Topics/HJR2/Review-of-previous-strategic-plans.pdf)

27) Nebraska State Archives: None identified.

28) Nevada State Library and Archives: None identified.

29) New Hampshire State Archives: None identified.

30) New Jersey State Archives: None identified.

31) New Mexico Commission of Public Records: Statute 1.13.3: Management of Public Records, 2008 (http://164.64.110.239/nmac/parts/title01/01.013.0003.htm)

32) New York State Archives: None identified.

33) State Archives of North Carolina: Guidelines for Managing Trustworthy Digital Public Records, Version 2.0, 2013 (http://www.ncdcr.gov/Portals/26/PDF/guidelines/guidelines_for_digital_public_records.pdf)

34) North Dakota State Archives: None identified.

35) Ohio State Archives: General Electronic Records Management, (http://ohsweb.ohiohistory.org/ohioerc/?page_id=171#legal)

36) Oklahoma State Archives and Records Management: Rules of the Oklahoma Archives and Records Commission, 2000 (http://www.odl.state.ok.us/oar/docs/oar-rules.pdf)

37) Oregon State Archives: None identified.

38) Pennsylvania State Archives: None identified.

39) Rhode Island State Archives: Rhode Island Judiciary Rules of Practice Governing Public Access to Electronic Case Information (file:///C:/Documents%20and%20Settings/rachel.muse/My%20Documents/Downloads/Rules_Governing_Public_Access_to_Electronic_Case_Information.pdf)

40) South Carolina Department of Archives and History: Technical Aspects of the Digital Collection (http://archives.sc.gov/onlineresearch/Pages/digitaltech.aspx); Electronic Records Management Guidelines (http://rm.sc.gov/electronicrecords/ERmanagementguidelines/Pages/default.aspx)

41) South Dakota State Archives: Digital Preservation Rules (http://history.sd.gov/archives/Data/digital/preservationrules.aspx)

42) Tennessee State Library and Archives: Tennessee Archives Management Advisory: Electronic Records Are Not Permanent Archival Records, 1999 (http://www.tennessee.gov/tsla/aps/tama/tama07electronic.pdf)

43) Texas State Archives: Texas State Records Management Manual for State Agencies: Electronic Records, 1998 (https://www.tsl.texas.gov/slrm/recordspubs/erk.html)

44) Utah State Archives: Guide to Digital Imaging, 2005 (http://archives.utah.gov/recordsmanagement/erm/digital_guide.pdf)

45) Vermont State Archives and Records Administration: None identified.

46) Library of Virginia: Electronic Records Guidelines, 2009 (http://www.lva.virginia.gov/agencies/records/electronic/electronic-records-guidelines.pdf); Digital Imaging Guidelines, 2008 (http://www.lva.virginia.gov/agencies/records/electronic/digital_imaging.pdf)

47) Washington State Archives: Digital Archives Policies (http://www.digitalarchives.wa.gov/StaticContent/da_policies); Imaging Systems, Standards for Accuracy and Durability, 2000 (http://app.leg.wa.gov/WAC/default.aspx?cite=434-663)

48) West Virginia State Archives: None identified.

49) Wisconsin Historical Society: None identified.

50) Wyoming State Archives: None identified.

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