Nineteenth Thing: Digital Preservation

In today's digital age, research data is increasingly born digital. As a researcher, you spend countless hours collecting, analysing, and interpreting data for your work. But have you considered what happens to that data once your research is complete?

Digital preservation is the active management of digital content to ensure its long-term usability, accessibility, and authenticity. It is critical to maintaining the integrity of research data and ensuring its availability for future generations of scholars. In this blog post, Elise Bradshaw explores the importance of digital preservation for researchers, describes some best practices for preserving your digital data, and explains how the University of Melbourne's strategic partnership with the Digital Preservation Coalition (DPC) supports digital preservation. Plus, an interview with Dr Eva Samaras gives a "Thing in Action" look at how the Records & Information team manage the University's digital records.

Why is digital preservation important?

The importance of digital preservation cannot be overstated. Here are some reasons why:

1. Research data is a valuable resource

It has the potential to inform future research and contribute to the advancement of knowledge. By preserving your data, you are ensuring that it remains accessible and usable for future research.

2. Digital data is inherently fragile

It is vulnerable to technological obsolescence, hardware failure, and data corruption. Without proper preservation, data can be lost forever.

3. Preserving research data is essential to maintaining research integrity

Research should be reproducible, and the data supporting it must be accessible to other scholars for verification and replication.

Best practices for digital preservation

Now that we have established the importance of digital preservation, let's explore some best practices for preserving your digital data.

1. Plan for preservation from the start

Digital preservation should be considered from the outset of any research project. You should plan for how you will collect, organise, store, and share your data. Consider the file formats you use, and ensure they are open and widely supported. Choose storage solutions that are secure, reliable, and allow for long-term access.

2. Document your data with great metadata

Great metadata and documentation are key to understanding and reusing research data. You should document your data collection methods, data processing and analysis procedures, as well as information describing and providing context for the research data. This documentation should be stored alongside your data and should be clear and understandable to other researchers and future users.

3. Backup your data

Backing up your data is critical to ensuring its preservation. You should create multiple backups of your data and, if possible, store them in geographically dispersed locations. This will protect against hardware failures, data corruption, and natural disasters. Consider a reliable, secure cloud backup service in addition to hard drives which can be easy to lose.

4. Choose preservable file formats

As technology advances and institutions and researchers move on to new things, certain file formats may become obsolete or inaccessible. Some formats require proprietary software to access that may not always be available and may render the data unusable. Consider whether a comparable open file format may be suitable for your work instead. It is important to keep up to date with changes to file formats and software tools used to access them.

5. Rethink password protection

Applying password protection to files containing research data can prevent the data from being accessed or preserved. Avoid password protecting data that does not require it. If the data is sensitive and requires higher security, make a plan to ensure the data can be appropriately accessed and preserved in future.

6. Use digital object identifiers (DOIs)

Digital object identifiers (DOIs) are persistent identifiers that can be assigned to research data. DOIs ensure that data can be easily cited and linked to in future publications. This makes it easier for other researchers to find and access your data. DOIs can be assigned to research data using Figshare, the University of Melbourne's research data publication repository. Other types of persistent identifiers (such as Open Researcher and Contributor IDs (ORCIDs) for individual researchers) may also be suitable for your work.

7. Consider open access

Open access is the practice of making research data freely available to the public. Open access can increase the visibility and impact of research and can lead to new collaborations and discoveries. Consider whether open access is appropriate for your research data and choose appropriate licensing.

The University of Melbourne in partnership with the Digital Preservation Coalition

The Digital Preservation Coalition (DPC) is a global membership organisation that supports its members to deliver resilient long-term access to digital content and services. In 2020, the University of Melbourne established a strategic partnership with the DPC resulting in the local delivery of events, webinars and training on digital preservation. The partnership is part of the University's Digital Preservation Strategy which includes a focus on advocacy, skills development, national and international community building and partnerships.

Learn more

Digital preservation is critical to ensuring the long-term accessibility and usability of research data. For more information on digital preservation see the Digital Stewarship Team at the University of Melbourne and the Digital Preservation Coalition's Digital Preservation Handbook.

About the author

Elise Bradshaw is a digital archivist and digital preservation practitioner working in the Digital Stewardship Team.

Interview with Eva Samaras

1. What is your role?

I currently work as a Senior Analyst in the Records & Information team at the University. In this role I provide advice to staff and researchers on recordkeeping practices including advising how long records (such as transcripts, reports, correspondence, data sets etc.) need to be kept, to meet business, legislative and cultural heritage requirements. I also provide guidance on how to meet our recordkeeping obligations under the Public Records Act 1973 (Vic), while also balancing the needs of University staff and researchers.

In recent years I completed my PhD, which explored archiving and records of the global film and television visual effects (VFX) industry. This research strengthened my knowledge of digital preservation practices, as the VFX industry manages very high volumes of almost exclusively born-digital records and a key goal of my research was to determine ways to preserve them!

2. How have you used with digital preservation in your role?

In my role I work with many areas across the University to investigate the records they create and manage. This work sometimes includes identifying important, digital records, which have ongoing value to the University and wider community, in accordance with the University Records Retention and Disposal Authority. In these situations, it is important for me to discuss with staff and researchers their plans to ensure the records are managed and backed-up appropriately during their

use. Another part of the conversation is planning ahead for when University business or research concludes, including determining ways for records and associated metadata to be transferred into the University of Melbourne Archives' custody and/or deposited into the University's Digital Preservation Repository.

3. How has digital preservation helped you work smarter, not harder when managing your research?

Understanding digital preservation and recordkeeping greatly helped me manage my doctoral research. I knew early that developing a Research Data Management Plan would be an important step in my research to help me determine the types of data I would be creating, and the access, storage and retention requirements. I also engaged with Research Data Management specialists at my university to understand the storage system offerings. As my research contains sensitive commercial in confidence data, it was very important for me to manage my data in a secure environment.

While my research did not meet the criteria for permanent retention at the University, my knowledge of digital preservation has ensured that my personal copies of my research data will be backed up and stored in sustainable formats over time.

4. What is your number one tip for digital preservation?

It is important to understand the value of your records upfront, so you can plan and manage them accordingly. My top tip is to plan ahead and seek advice early on.

About the Interviewee

Dr Eva Samaras is a practitioner-researcher specialising in information management, archiving, digital preservation and media production. Eva is a Senior Analyst within the University's Records & Information team. She previously held positions at the National Archives of Australia, Public Record Office Victoria, and Australian Broadcasting Corporation. Eva completed her PhD in 2021 at the University of Technology Sydney's Animal Logic Academy. Her research examines records and archiving practices in the global film and television visual effects industry.

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