

Implementing Digital Preservation at the University of Melbourne

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ABSTRACT

To implement the University of Melbourne's digital preservation strategy, during 2016-2017 a small project team (1.6 staff) was tasked with achieving goals within four key areas: *Culture*, *Infrastructure*, *Policy*, and *Organisation*. These goals have involved planning for digital curation education improvements, assessing relevant university policies and procedures, and planning for a digital preservation ecosystem encompassing many different key stakeholders. The goals and achievements to date for the project are described, as are some next steps that are building on these activities.

KEYWORDS

Preservation strategy, Digital preservation project

1 THE STRATEGY AND ROADMAPS

The University of Melbourne's ten-year digital preservation strategy [1] takes into account interrelated groups of digital materials, including research outputs (e.g. higher degree theses), research data, university records (born digital or digitised records forming organisational memory and legacy), and cultural collections (as defined by the university's Collections Policy [2]). Four key principles underpin the strategy: *Culture*, *Infrastructure*, *Policy*, and *Organisation*. To implement the strategy, roadmaps were developed for research outputs and research data [3]. These areas were initially prioritised due to:

- Funding mandates for research data preservation
- The pressing need to implement digital preservation processes for the move to digital-only submissions of higher degree research theses
- The lack of project resources to tackle the research outputs, research data, university records, and cultural collections areas simultaneously.

2 GOALS FOR 2016-2017

Using the implementation roadmaps to guide the project work, in 2016-2017 the project team was tasked with high-level goals for each of the four key principles: *Culture*: Develop an engagement plan and education framework to increase digital preservation awareness; *Infrastructure*: Develop functional and non-functional requirements for implementing a preservation platform; *Policy*: Review and align university policies related to the management and preservation of research data and records; *Organisation*: Review digital processes and workflows for management of research product [4]. These efforts are ongoing, and some successful outcomes can already be noted.

2.1 Culture and Communication

A training framework was developed to guide improvements for four areas: Fundamentals of digital preservation, Archiving and data management, Technical requirements, and Business requirements [5]. The framework provides high level, overarching principles, and next steps are identifying different requirements of staff and researchers in order to implement these. A constant challenge throughout the project has been the confusion around terminology, particularly "digital preservation" and "archiving". It has been useful to attempt to define these terms clearly, then to revisit these definitions with different stakeholders, noting the differences, and using these to generate conversation in order to begin building a shared understanding. This is a complex and ever-evolving task but a worthwhile investment, because it provides a sense of clarity for stakeholders where previously there was confusion, and has enabled a sense of connection and shared purpose. The digital preservation project has acted as a connector for some of the cultural dissonances that have arisen over time at the university, particularly around understanding and managing research data. Joining the Digital Preservation Coalition (DPC) in June 2017 has contributed to the university's development of a research community of practice, through using the online resources offered by the DPC for various initiatives and events. Being a DPC member has allowed the university to learn about international developments and case studies happening in the field much more readily.

2.2 Infrastructure Blueprint Pilot Projects

To begin assessing functional and non-functional requirements for implementing a preservation platform, in 2017 the project team scoped and implemented four collaborative blueprint pilot projects. Selection of these pilots was based on readiness of the

digital materials to be investigated for long-term preservation, and the human resources available in each area to aid the project team. These pilots were led by different teams at the university to highlight the importance of collaborative workflows across university departments, necessary if long-term preservation is to succeed. By involving infrastructure service providers, archivists, and faculty support staff in the requirements gathering process, the people needed to play key roles in creating and maintaining a preservation ecosystem were engaged early. The pilots were designed primarily to identify and scope requirements for preservation storage, but also assessed the effectiveness of current workflows, staffing requirements, and costs associated with long-term preservation.

2.2.1 Digital Archives Pilot. This pilot, led by the University of Melbourne Archives, trialled Archivematica for digitised and born digital cultural collections, and a selection of university council minutes. It aimed to highlight infrastructure and skill gaps, and evaluate what is required to move from a pre-digital archiving paradigm to one that supports managing digital materials.

2.2.2 Architecture Building Archive Pilot. The Architecture faculty led this pilot to determine infrastructure requirements to support curation and preservation of research data for individual researchers and large research groups.

2.2.3 Digital Theses Preservation Pilot. In early 2017, digital-only deposit of theses became mandatory at the university. The institutional repository team assessed the suitability of Archivematica for long-term preservation processes for digital theses.

2.2.4 Active Research Data Preservation Pilot. The university's research infrastructure team assessed current storage, tools, and systems available for managing research data, and began to investigate preservation storage requirements.

2.3 Policy Review

A review was commissioned to identify the effectiveness of current university policy to support long-term preservation [6]. Eight relevant university policies were identified and analysed. A key general recommendation was that adopting a sustainable funding stream to meet obligations for the long-term preservation of digital product is essential. This may seem obvious, but given the current lack of awareness of the need for and requirements of digital preservation at the university, it is important that this point is reiterated and promoted to relevant decision makers as a key policy issue. Currently, the onus lies with research units or departments to establish procedures for data retention, and to maintain a register of research data and their location and storage requirements. The policy review questions whether this siloed approach is suitable for long-term digital preservation, or whether developing a university-wide register of research data and records and storing them in a central repository would be preferable. The digital preservation project team remains committed to actioning the recommendations, but with 1.6 staff we have been stretched thinly across other project deliverables. For now, we maximise opportunities to lobby senior decision makers at the university, to promote clear understanding of the shared goals required for long-

term digital preservation, and to promote the pressing need for policy direction.

2.4 Organisation Reports

One major activity for the *Organisation* principle was documenting the main barriers to implementing digital preservation at the university, specifically targeting the library, archives, and research IT support areas [7]. The resulting report summarises the findings from forty face-to-face interviews in these areas. Major findings included that holistic data curation processes are lacking, and that digital preservation is not widely understood as an important part of the research lifecycle. A siloed way of working was identified as a major organisational barrier to developing shared messaging and values. Also identified was the need for a community of practice, to enable key stakeholders to meet regularly to avoid duplication of effort and consolidate messaging to the research community. This report presented many issues and recommendations for action. Awareness has been raised that without organisational cohesion to improve ad hoc, unconnected services, confusion and lack of clearly defined responsibilities will negatively impact the goals of the digital preservation project. The second major activity was documenting fifteen case studies of current research data management practices in different disciplines [8]. These provided insights that the project team is using for building the ongoing business case for the digital preservation project, as they demonstrate that little to no long-term thinking is put in place at the start of projects, thus barring preservation from becoming an important part of the research lifecycle.

3 CONCLUSION

Implementing a digital preservation strategy has been a challenging undertaking with few dedicated project resources, yet our work to date has identified key findings that help build new opportunities. In-kind support provided by the wider research community at the university will continue to be essential, particularly for assessing gaps and gathering requirements for the implementation of a preservation ecosystem at the university.

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