Sustainable, Usable and Visible Digital Cultural Heritage: Twinning for Excellence (DIGHT-Net)

Guidelines on the Establishment and Digitisation of Personal Scholarly Archives

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0. Executive Summary

These guidelines provide a comprehensive and detailed framework for the establishment, digitisation, and long-term management of personal scholarly archives as digital cultural heritage resources.

They combine theoretical and methodological perspectives with practical recommendations, aligning with FAIR principles, open science practices, and European Commission expectations.

The guidelines highlight the need to rethink personal archives not only as collections of documents, but as cultural, methodological, and participatory environments. Such archives should support research, pedagogy, and public engagement while also functioning as sustainable and interoperable digital infrastructures.

Key recommendations include:

- Conceptualising archives as living ecosystems, rather than static repositories.
- Designing for multiple audiences through layered, multilingual, and inclusive interfaces.
- Implementing robust technical standards (metadata, persistent identifiers, high-resolution digitisation, OCR).
- Addressing copyright, privacy, and ethical considerations through transparent policies.
- Ensuring sustainability through reliable infrastructures, governance frameworks, and Green ICT practices.
- Fostering co-creation and public participation as integral elements of digital cultural heritage.
- Embedding archives within transnational and interdisciplinary networks for knowledge exchange.

These guidelines are informed by the study of two paradigmatic cases: the archives of Umberto Eco and Juri Lotman. While distinct in scope and accessibility, both demonstrate the potential of personal scholarly archives to become transnational hubs for research and cultural engagement when digitised responsibly and strategically.

1. Theoretical and Methodological Approach

Digital archives and cultural heritage are undergoing a paradigm transformation driven by advances in information and communication technologies. DIGHT-Net contributes to this shift by promoting an innovative theoretical framework rooted in semiotics and cultural

theory, while remaining in dialogue with digital humanities, archival sciences, and critical heritage studies.

In this framework:

- Digital cultural heritage is understood as a dynamic process of meaning-making, not a static repository.
- Archives are seen as cultural texts that continuously generate new interpretive practices, mediating between traces, documents, and their digital translation.
- A semiotic theory of digital cultural heritage is proposed to account for the complex relationship between pre-digital and digital epistemologies.

Personal scholarly archives, such as those of Umberto Eco and Juri Lotman, exemplify the intellectual richness and complexity of archives as cultural organisms. Eco's model of the "Encyclopedia" highlights the interconnectivity of knowledge, while Lotman's "Semiosphere" underscores the cultural dynamics of textual environments. Together, they demonstrate how personal archives function as living ecosystems of intellectual processes, encompassing marginalia, correspondence, manuscripts, and libraries.

Guideline 1.1: Every project should articulate a clear theoretical framework, demonstrating how its technical and organisational choices align with cultural and intellectual objectives. This will ensure that digital archives are more than storage infrastructures, becoming instead spaces of cultural and scholarly innovation.

2. Objectives: From Digitisation to Digital Cultural Heritage

The central objective of these guidelines is to move beyond digitisation as a purely technical process and to frame archives as cultural heritage infrastructures. A simple set of digitised documents, however valuable, remains an isolated collection. A digital archive, by contrast, is a semantically rich environment designed for access, interpretation, and reuse.

Objectives include:

- Creating structured archives with semantic depth, not merely digitised collections.
- Designing archives as living environments of memory that stimulate creative uses and rhizomatic connections among documents.
- Prioritising user-centred design that simulates the experience of engaging with a physical library while expanding research possibilities.
- Ensuring interoperability with other archives and platforms, embedding personal archives within transnational scholarly networks.

In the case of Eco and Lotman, the objective is not only preservation but valorisation of intellectual processes. User interfaces, semantic structures, and navigation maps should be developed to allow users to browse, assemble, and connect documents, creating new intellectual pathways.

Guideline 2.1: Archives should provide advanced functionalities for scholars, pedagogical tools for educators and students, and narrative pathways for general audiences.

Guideline 2.2: Interoperability should be a design principle from the outset, ensuring the archive's integration into broader research and cultural heritage infrastructures.

3. Governance and Roles

Establishing a successful digital archive requires clear governance structures and allocation of responsibilities. Governance should encompass strategic planning, legal compliance, technical management, and user engagement.

Recommended governance elements:

- A coordinating institution responsible for strategic oversight and sustainability.
- Curatorial teams managing content selection, metadata, and contextualisation.
- Legal advisors handling copyright, privacy, and ethical issues.
- IT specialists ensuring technical robustness, interoperability, and security.

Guideline 3.1: Each archive should publish a governance framework outlining responsibilities, workflows, and decision-making procedures. This framework should be transparent and available to users and stakeholders, ensuring accountability and trust.

4. Challenges and Risks

Opening personal scholarly archives to the digital domain involves challenges that go beyond technical operations.

Key challenges include:

- Heterogeneity of materials: manuscripts, books, marginalia, correspondence, audiovisual content, and born-digital files require diverse digitisation and preservation strategies.
- Copyright and intellectual property: negotiations with heirs, publishers, and institutions can delay or limit access.

- Privacy and ethical issues: sensitive correspondence and drafts not intended for publication demand careful handling.
- Funding and sustainability: digital infrastructures require continuous resources beyond project funding periods.
- Technological obsolescence: evolving standards and software necessitate proactive migration strategies.
- AI and ethics: the integration of AI for enrichment and access presents challenges of accuracy, bias, opacity, and environmental cost, as well as dependency on commercial services and uncertain long-term reproducibility.

Guideline 4.1: Each archive project should prepare a risk management plan that anticipates challenges, proposes mitigation strategies, and assigns responsibilities for addressing them. Risks should include legal disputes, data obsolescence, infrastructure vulnerabilities, financial sustainability gaps, and the ethical and technical risks of AI use.

5. Criteria for Personal Scholarly Archives

5.1 Selection and Planning:

- Selection should balance significance, preservation needs, copyright restrictions, and public interest.
- Transparency in selection criteria is essential to maintain scholarly integrity and public trust.

5.2 Uniqueness and Intellectual Identity:

- Archives should prioritise materials that capture the scholar's intellectual trajectory and uniqueness, such as annotated books, correspondence, and drafts.

5.3 Sustainability:

- Adoption of Green ICT practices is essential to reduce the environmental footprint of digitisation.
- Long-term hosting agreements and redundant backups must be ensured to protect against data loss.

5.4 Accessibility and Inclusivity:

- Archives must comply with FAIR principles, ensuring that materials are Findable, Accessible, Interoperable, and Reusable.
- Multilingual metadata and interfaces should reflect the cultural and linguistic diversity of users.

- Web accessibility standards (WCAG) should be followed to guarantee inclusivity.

5.5 Legal and Ethical Dimensions:

- Access should be differentiated according to sensitivity: open access for non-sensitive materials, restricted access for private or unpublished documents.
- Ethical guidelines should be published for users, clarifying conditions for quotation, citation, and reuse.
- Informed consent must be obtained when required.

Guideline 5.1: Each project must draft a comprehensive selection and sustainability plan, which documents the criteria and processes applied in establishing the digital archive.

6. User Engagement and Co-Creation

A defining feature of digital scholarly archives is their capacity to engage multiple audiences. Beyond serving as research infrastructures, archives should also function as pedagogical and public resources.

Recommended practices include:

- Designing user pathways tailored to scholars, students, and the wider public.
- Offering curated digital exhibitions and storytelling formats for non-specialist users.
- Enabling participatory practices such as crowdsourcing annotations, translations, or transcriptions.
- Creating participation and moderation strategies that ensure co-creation enriches the archive, while protecting it against misuse and malicious manipulation of content.
- Encouraging student involvement in cataloguing and interpretation, integrating the archive into teaching activities.

Guideline 6.1: Projects should prepare a user engagement strategy that ensures inclusivity, public participation, and adaptability to evolving user needs.

7. Training, Capacity-Building, and Outreach

To ensure long-term impact, digital archive projects must invest in capacity-building and outreach.

Recommended measures include:

- Training workshops for archivists, librarians, and IT specialists.

- Digital literacy modules for students and educators integrated into curricula.
- Outreach initiatives such as public lectures, exhibitions, and online tutorials to increase visibility and use of the archive.
- Collaboration with schools, universities, and cultural institutions to expand access and educational impact.

Guideline 7.1: Each archive project should include a capacity-building and outreach plan to ensure that knowledge and skills are disseminated widely and sustainably.

8. Monitoring, Evaluation, and Impact

Digital archives must implement monitoring and evaluation mechanisms to assess their impact and ensure continuous improvement.

Suggested evaluation metrics include:

- Number and diversity of users, including scholars, students, and public audiences.
- Downloads, citations, and reuse of archival materials in research and teaching.
- Interoperability with other repositories and inclusion in international networks.
- Inclusivity measures such as multilingual access and accessibility compliance.

Guideline 8.1: Projects should implement annual evaluations using both quantitative and qualitative indicators, reporting results transparently and adapting strategies where necessary.

9. Technical Infrastructure

Robust technical infrastructures are essential for the success of digital scholarly archives.

Recommendations include:

- Using trusted repositories with proven track record of long-term preservation and migration, openness and interoperability and alignment with FAIR and open science practices.
- Employing sustainable archival formats such as TIFF, PDF/A, and XML for long-term preservation.
- Adopting metadata standards like Dublin Core, EDM, TEI, and METS.
- Assigning persistent identifiers (DOI, Handle, ARK) to all datasets and documents.
- Implementing OCR and high-resolution digitisation workflows to enhance accessibility and usability.

- Considering AI-based enrichment approaches to improve discoverability, accessibility, and multilingual use of archival materials, provided that their accuracy, provenance, ethical implications, and environmental impacts are carefully assessed and openly communicated.

Guideline 9.1: Each archive should publish a technical architecture plan that documents infrastructure, standards, interoperability measures, the use of AI, and long-term preservation strategies.

10. Conclusion

By adhering to these guidelines, personal scholarly archives can become sustainable, accessible, and participatory infrastructures of digital cultural heritage. They will preserve and valorise intellectual legacies such as those of Eco and Lotman, amplify research potential, support pedagogy, and engage diverse publics.

The DIGHT-Net project positions such archives as more than technical achievements. They represent cultural laboratories where innovation, inclusivity, and transnational collaboration converge. These archives thus contribute not only to scholarly research but also to the strengthening of European cultural heritage and collective memory.