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ELECTRONIC RESOURCE PRESERVATION AND ACCESS NETWORK

www.erpanet.org

ELECTRONIC RESOURCE PRESERVATION AND ACCESS NETWORK

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Executive Summary

The growth of digital information in UK higher education institutions has been steadily increasing. Although, digital preservation has been seen as a major strategic priority within the UK Higher Education for some time, efforts to ensure users' continued access to this data in years to come have been relatively sparse among stakeholders.

Indeed, very few Higher Education institutions in the UK have begun to tackle the problem of digital preservation. However, there are some pioneering examples of projects in UK academia. One of these initiatives is undoubtedly the Cedars Projects[1] from the University of Leeds, the broad objective of which was to explore digital preservation issues. Among these Cedars initiatives/projects, Edinburgh University has contributed to digital preservation at a practical level. Edinburgh University regards their participation within the framework of emerging national strategies as vital.

The University Library undertook a Digital Preservation project in 2001. This project aims to produce a comprehensive strategy for the permanent preservation of the University's core electronic publications. The Project is due to last 12 months and the research officer will pilot an electronic archive, using the University Calendar as a test-bed. In addition, key areas of digital preservation will be investigated including preservation techniques, metadata, and legal issues.

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[1] http://www.leeds.ac.uk/cedars/.

Chapter 1: The ERPANET Project

The European Commission and Swiss Confederation funded ERPANET Project[2] (Electronic Resource Preservation and Access Network) works to enhance the preservation of cultural and scientific digital objects through raising awareness, providing access to experience, sharing policies and strategies, and improving practices. To achieve these goals ERPANET is building an active community of members and actors, bringing together memory organisations (museums, libraries and archives), ICT and software industry, research institutions, government organisations, entertainment and creative industries, and commercial sectors. ERPANET constructs authoritative information resources on state-of-the-art developments in digital preservation, promotes training, and provides advice and tools.

ERPANET consists of four partners and is directed by a management committee, namely Seamus Ross (HATII, University of Glasgow; principal director), Niklaus Bütikofer (Schweizerisches Bundesarchiv Hans Hofman (Nationaal Archief/National Archives of the Netherlands), and Maria Guercio (ISTBAL, University of Urbino). At each of these nodes a content editor supports their work, and Peter McKinney serves as a co-ordinator to the project. An Advisory Committee with experts from various organisations, institutions, and companies from all over Europe gives advice and support to ERPANET.

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[2] ERPANET is a European Commission funded project (IST-2001-32706). See www.erpanet.org for more details and available products.

Chapter 2: Scope of the Case Studies

While theoretical discussions on best practice call for urgent action to ensure the survival of digital information, it is organisations and institutions that are leading the drive to establish effective digital preservation strategies.[3] In order to understand the processes these organisations are undertaking, ERPANET is conducting a series of case studies in the area of digital preservation. In total, sixty case studies, each of varying size, will investigate awareness, strategies, and technologies used in an array of organisations. It is anticipated that upwards of 500 organisations, institutions and public bodies will eventually contribute to this research. The resulting corpus should make a substantial contribution to our knowledge of practice in digital preservation, and form the foundation for theory building and the development of methodological tools. The value of these case studies will come not only from the breadth of sectors included, but also through the depth at which they will explore the issues.

ERPANET is deliberately and systematically approaching disparate sectors from industry and business to facilitate discussion in areas that have traditionally been unconnected. With these case studies ERPANET will broaden the scope and understanding of digital preservation through research and discussion. The case studies will be published to improve the approaches and solutions being developed and to reduce the redundancy of effort. The interviews are identifying current practice not only in-depth within specific sectors, but also cross-sectorally: what can the publishing sector learn from the aeronautical sector? Eventually we aim to use this comparative data to produce intra-sectoral overviews.

This cross-sectoral fertilisation is a main focus of ERPANET as laid out in its Digital Preservation Charter.[4] It is of primary importance that disparate groups are given a mechanism through which to come together as best practices for digital preservation are established in each sector.

Aims
The principal aims of the study are to:

- build a picture of methods and match against context to produce best practices;

- accumulate and make accessible information about practices;

- identify issues for further research;

- enable cross-sectoral practice comparisons;

- enable the development of assessment tools;

- create material for training seminars and workshops; and,

- develop contacts.

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[3] Chapters 2 and 3 are taken from 'Cross-sectoral Development of Digital Preservation Strategies: ERPANET and the Expansion of Knowledge', given at *Preservation of Electronic Records. New Knowledge and Decision-making*, Symposium 2003.
[4] The Charter is ERPANET's statement on the principles of digital preservation. It has been drafted in order to achieve a concerted and co-ordinated effort in the area of digital preservation by all organisations and individuals that have an interest and share these concerns.
http://www.erpanet.org/www/content/documents/Digitalpreservationcharterv4_1.pdf.

Potential sectors have been selected to represent a wide scope of information production and digital preservation activity. Each sector may present a unique perspective on digital preservation. Organisational and sectoral requirements, awareness of digital preservation, resources available, and the nature of the digital object created place unique and specific demands on organisations. Each of the case studies is being balanced to ensure a range of institutional types, sizes, and locations.

The main areas of investigation included:

- perception and awareness of risk associated with information loss;

- understanding how digital preservation affects the organisation;

- identifying what actions have been taken to prevent data loss;

- the process of monitoring actions; and,

- mechanisms for determining future requirements.

Within each section, the questions were designed to bring organisational perceptions and practices into focus. Questions were aimed at understanding impressions held on digital preservation and the impact that it has had on the respective organisation, exploring the awareness in the sector of the issues and the importance that it was accorded, and how it affected organisational thinking. The participants were asked to describe, what in their views, were the main problems associated with digital preservation and what value information actually had in the sector. Through this the reasons for preserving information as well as the risks associated with not preserving it became clear.

The core of the questionnaire focused on the actions taken at corporate level and sectoral levels in order to uncover policies, strategies, and standards currently employed to tackle digital preservation concerns, including selection, preservation techniques, storage, access, and costs. Questions allowed participants to explore the future commitment from their organisation and sector to digital preservation activities, and where possible to relate their existing or planned activities to those being conducted in other organisations with which they might be familiar.

Ten organisations in each sector, and three people within each organisation are targeted for each study. In reality this proved to be problematic. Even when organisations are identified and interviews timetabled, targets often withdrew just before we began the interview process. Some withdrew after seeing the data collection instrument, due in part to the time/effort involved, and others (we suspect) dropped out because they realised that the expertise was not available within their organisation to answer the questions. The perception of risks that might arise through contributing to these studies worried some organisations, particularly those from sectors where competitive advantage is imperative, or liability and litigation issues especially worrying. Non-disclosure agreements that stipulated that we would neither name an organisation nor disclose any information that would enable readers to identify them were used to reduce risks associated with contributing to this study. In some cases the risk was still deemed too great and organisations withdrew.

Chapter 3: Method of Working

Initial desk-based sectoral analysis provides ERPANET researchers with essential background knowledge. They then conduct the primary research by interview. In developing the interview instrument, the project directors and editors reviewed other projects that had used interviews to accumulate evidence on issues related to digital preservation. Among these the methodologies used in the Pittsburgh Project and InterPARES I for target selection and data collection were given special attention. The Pittsburgh approach was considered too narrow a focus and provided insufficient breadth to enable full sectoral comparisons. On the other hand, the InterPARES I data collection methodology proved much too detailed and lengthy, which we felt might become an obstacle at the point of interpretation of the data. Moreover, it focused closely on recordkeeping systems within organisations.

The ERPANET interview instrument takes account of the strengths and weaknesses from both, developing a more focussed questionnaire designed to be targeted at a range of strategic points in the organisations under examination. The instrument[5] was created to explore three main areas of enquiry within an organisation: awareness of digital preservation and the issues surrounding it; digital preservation strategies (both in planning and in practice); and future requirements within the organisation for this field. Within these three themes, distinct layers of questions elicit a detailed discovery of the state of the entire digital preservation process within participants' institutions. Drawing on the experience that the partners of ERPANET have in this method of research, another important detail has been introduced. Within organisations, three categories of employee were identified for interview: an Information Systems or Technology Manager, Business Manager, and Archivist / Records Manager. In practice, this usually involved two members of staff with knowledge of the organisation's digital preservation activities, and a high level manager who provided an overview of business and organisational issues. This methodology has allowed us to discover the extent of knowledge and practice in organisations, to understand the roles of responsibility and problem ownership, and to appreciate where the drive towards digital preservation is initiated within organisations.

The task of selecting the sectors for the case studies and of identifying the respective companies to be studied is incumbent upon the management board. They compiled a first list of sectors at the very beginning of the project. But sector and company selection is an ongoing process, and the list is regularly updated and complemented. The Directors are assisted in this task an advisory committee.[6]

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[5] See Appendix III. We include the questionnaire to encourage comment and in the hope that other groups conducting similar research can use the ideas contained within it to foster comparability between different studies.
[6] See www.erpanet.org for the composition of this committee.

Chapter 4: Introduction to Sector

Digital preservation has been seen as a major strategic priority within the UK HE for a number of years. Going back to 1995, a JISC/BL Workshop focused on digital preservation. Since then, much work has been undertaken but major challenges remain. The JISC Continuing Access and Digital Preservation Strategy 2002-2005 has committed substantial funds to move the agenda forward, from short-term projects, towards establishing sustainable services. The programme to support this strategy includes scoping and feasibility studies and also services, advice and support. Of the latter, the recently formed Digital Preservation Coalition has brought together a number of key stakeholders and is helping to foster collaboration and co-ordination. The proposed Digital Curation Centre will provide support for researchers, institutions, and archiving bodies managing digital collections, by providing a centralised source of information on file formats and preservation tools.

The preservation of digital resources is of great importance to the academic community and society as a whole. Institutions are in danger of losing much of our academic and cultural heritage through neglect of these burgeoning resources. All of the interviewees from the University of Edinburgh had a very high level of awareness of digital preservation issues as they are one of the few UK Higher Education institutions that have developed a digital preservation strategy and undertaken actions in practical level. The Special Collections Division of the University of Edinburgh Library, focuses on research methods of preserving information generated in digital form, and provides a set of guidelines and recommendations for the benefit of the university as a whole.

Chapter 5: Details of Interviews

Edinburgh University Library (EUL) was founded in 1580. The Special Collections Department in the University Library has initiated a Digital Preservation project, which aims to provide advice and act as a focus to raise awareness, university-wide, of digital preservation issues. For any organisation or department that produces electronic information, a strategic preservation plan is vital to ensure the physical reliability, continued usability, and intellectual integrity of their files. The project aims to recommend and produce guidelines for the future publishing of University web sites and electronic materials, and will produce a comprehensive strategy for the permanent preservation of the University's core electronic publications.[7]

Recognising the growing need for a Digital Preservation strategy within The University of Edinburgh, a Digital Archives Research Officer was appointed in June 2001 to research the preservation of core University publications.

Digital resources are part of the responsibility of Edinburgh University Library, and are therefore subject to the same preservation policies as other media. Policies for digital preservation should be coordinated with those for the preservation of analogue material, such as manuscripts, microfilm, or paper journals.

The material that the University of Edinburgh produces in electronic format is extremely wide ranging from committee papers to cutting edge scientific databases.

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[7] http://www.lib.ed.ac.uk/sites/digpres/.

Chapter 6: Circumstances

ERPANET initially contacted Ms. Najla Semple at the University Library, who is the Digital Archives Officer. Ms Semple appointed two other colleagues at the University Library who agreed to take part in the case study: Susan Graham, the Records Manager at the University and Morag Watson, who is the System Librarian at the University Library dealing with the IT support.

The questionnaires were sent on the 23rd of June 2003 and the interviews took part on the 2nd of July at the University of Edinburgh Library.

Chapter 7: Analysis

This section presents an analysis of the data collected during the case study. It is organised to mirror the sequence of topics in the questionnaire.

- Perception and Awareness of Digital Preservation

- Preservation Activity

- Compliance Monitoring

- Digital Preservation Costs

- Future Outlook

Perception and Awareness of Digital Preservation

Although the University of Edinburgh has taken precautions to ensure continued access to this data in years to come, they also realise that more work needs to be done.

Electronic information is forming an increasingly large part of Edinburgh University's academic and administrative activities. The prospect of losing this data through poor management has begun to raise awareness of the fragility of digital formats.

Awareness is continuously growing at the University of Edinburgh, in many cases however, it is an issue of lack of resources that is holding them back, preventing them to take more drastic decisions.

As the University of Edinburgh is a 'cultural memory organisation, they realise that the digital data they are producing are of great value. Therefore, they actively monitor developments in digital preservation disseminated in Higher Education literature, listservs and conferences.

Asset Value and Risk Exposure

Digital data are subject to legal and financial risks. To meet legal and financial requirements, the Edinburgh University is mainly preserving digital University records. Edinburgh University is one of the oldest Institutions in the UK so historical value is also a main reason for preserving digital information.

The recent Freedom of Information Act (Scotland) 2001[8] has a bearing on any public authorities in Scotland in that members of the public now have the right to access information that is held by these authorities. Edinburgh University is one of these authorities and therefore legal issues are an important consideration when embarking on the preservation of digital content.

There are certain exceptions to the categories of information accessible, but if a request is received to access a record (regardless of the material being analogue or digital), the record has to be instantly retrievable and come attached with a verified provenance. In short, the archive will demonstrate that all digital information on a

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[8] http://www.hmso.gov.uk/acts/acts2000/20000036.htm.

specific topic is available for review at any time. This means that, in effect, strict electronic records management policies have to be in place. The Records Management Department is currently in the process of re-adjusting and developing guidance and policies, which will eventually apply across the whole University. They will provide wide guidance criteria and generic best practices so that every administrative unit at the University will be able to adapt them in their own needs.

Policies and Strategies

The University of Edinburgh investigated similar digital preservation projects and initiatives prior to designing their digital preservation strategy. Conferences were attended, including the Cedars dissemination events[9]. Talks on this project were delivered to Scottish Cultural Resources Access Network (SCRAN), to the Society of Archivists and to groups within The University of Edinburgh. A large digital preservation seminar was organised in September 2001 at the University. The Institution also contacted Research Libraries Group (RLG) for advice on digital preservation issues.

The University is collaborating with other institutions on the research and development of policies, strategies and standards. Currently they are collaborating with Glasgow University on a records management project. In addition, the Public Record Office and the Digital Preservation have been approached by the University of Edinburgh and have expressed their desire to develop a closer collaboration in the future.

The University has its own task force, which has been appointed by the University Library, in charge of the development and creation of organisational policies that relate to digital preservation issues. These policies apply to separate administrative units but not across the entire organisation as yet.

The task force has developed preservation strategies within records management systems but hasn't yet started to implement them. They have just acquired a digital object management system called "Collection Gateway" and they are undertaking a pilot project on "DSpace", building strategies in to both of them at the moment.

Selection

In order to facilitate effective management of Edinburgh University's records, it is vital that a records management strategy is put in place.

The University adopts a devolved approach to records management, with individual business areas being responsible for the management of the records created in their area. The Records Management Section is responsible for developing policies and guidance to help business areas to do this, including guidance on retention scheduling, legal admissibility and preservation strategies. A number of items of draft guidance have been prepared and will be disseminated once a network of University records managers has been set up. At the same time the University Archivist is re-evaluating his selection and appraisal criteria.

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[9] http://www.leeds.ac.uk/cedars/dissem.htm.

Preservation

The University Library is responsible for researching, developing and drafting guidelines on the preservation of digital information. Training comes mainly in the form of conference attendance, including participation in ERPANET workshops.

The University of Edinburgh seems to be very much aware of external standards, best practices and guidelines related to digital preservation. The Digital Archives Officer mentioned they use explicitly the OAIS model and the Cedars guidelines as well as RLG (Trusted attributes). They are also looking closely to the Metadata Encoding & Transmission Standard (METS).

For the time being, they are applying migration techniques to image files and at the same time they are transferring University records to XML. These techniques were chosen based on the electronic records life cycle and on archival concepts applied from the creation stage.

The University has decided to use standard and open data formats for preservation, specifically PDF and XML formats.

The purpose of Metadata schema is to propose a metadata description for archival electronic documents to ensure their long-term preservation. The metadata schema developed by the University of Edinburgh follows the Cedars standards and is quite flexible.[10] Metadata are stored in XML files with an accompanying DTD. This set of descriptors has, in the main, followed a qualified Dublin Core metadata schema and has been adopted from the recently compiled Cedars metadata schema, which has been largely influenced by the OAIS model structure[11]. The collection and production of metadata is not automated yet, but they are hoping to achieve this through their new library system.

The person responsible for the transfer of information into long-term storage is the Digital Archives Officer in the library and she is doing it via ftp.

Currently migration doesn't follow a specific strategy but is based on the systems' needs. However, based on their future strategies they will migrate data probably every four years.

The computing services of the University have developed an optical jukebox system to store the digital information they are preserving. In the same system they are preserving redundant copies of their digital data for safety. Every member of the University has the right to ftp digital files in order to store them in a safe place. However, the system doesn't allow any alterations or changes.

A prototype archive was set up for the University Calendar. Processes were identified and will be implemented at a later date when the archive is fully established.

Although these processes reflect the OAIS model, they largely emulate the Cedars and Nedlib recommendations. They are based on the assumption that the byte stream should be separated from the file format - only on accessing the object from the archive, is it transformed into a readable file.

The storage area will be provided by the already existing Edinburgh University Computing Services (EUCS) archiving facility and it is going to be based on the Write

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[10] http://www.lib.ed.ac.uk/sites/digpres/metadataschema.shtml.
[11] Preservation Metadata Scheme is available in Appendix II.

Once Read Only technique - WORM. It is very suitable for bulk data storage and is already used as a service offered to university members for personal data storage. There is no intervention on behalf of the administrators on the archive files that have been written in any format for the last 20 years. Thus there can be no guarantee that these files can be read in the future. That's why the project will use the services of the archive, but will incorporate further techniques to ensure preservation. Note that a firewall is not set up at EUCS for purposes of the archive, as it is accessible only by members of Edinburgh University.

An important point to make is that users will not have the capacity to delete or modify objects once they have been archived. The archivist will be able to alter its access rights externally but cannot physically delete or update an object. With this technology it will be impossible to go back and add more metadata to the object.

Therefore administrative and bibliographic metadata has to be kept in a separate place, so that it can be updated when necessary.

Access

Access to digital Information is very secure at the University of Edinburgh, since it is only provided only via ftp secure accounts. The Library Archivist is responsible for enabling access to digital information.

The University's legal system has not yet fully taken into account documents in the digital domain, yet they still have to conform to laws made for analogue material.

This is especially the case with the Copyright law of 1988[12]. Copyright is automatically understood at the point of creation. Copying digital material into an archive will therefore be a problem for any archive that Edinburgh University sets up. Moreover, access security and privileges as well privacy issues are very much taken into consideration, that's why the University intends to provide very limited access to digital information in the future.

Again this relates back to the concept of preservation vs. access. The digital archive is specifically designed for preservation. Other projects, namely records management projects concentrate on access. The technology they use allows records and metadata to be updated and easily accessed.

Compliance Monitoring

The monitoring of actions on digital preservation doesn't follow a coherent process. Basically, there are no audit controls in the preservation process. However, the Freedom of Information Act is forcing them to comply to legal requirements that are audited on a regular basis. The Code of Practice[13] sets out the conditions for which public bodies should create, manage, retain and dispose of their records. Retention schedules should be allocated, and all records should be indexed. Edinburgh

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[12] http://www.hmso.gov.uk/acts/acts1988/Ukpga_19880048_en_1.htm.
[13] Code of practice on the management of records under the Freedom of Information Act, Public Records Office, http://www.pro.gov.uk/recordsmanagement/freedomofinformation.htm.

University has its own FOI committee group.
(http://www.planning.ed.ac.uk/FOI/pubbackground.htm)

Digital Preservation Costs

The University of Edinburgh didn't provide any specific answers about digital preservation costs. They informed us that they don't undertake cost benefit analysis concerning their investments in digital preservation.

The interviewees pointed out that there are no available sources of funding allocated for digital preservation issues and that they are dissatisfied about how the cross-sector services work. There are external funding sources available for digital preservation activities but they are not easy to get.

Future outlook

The University of Edinburgh has fully realised the importance of having a solid and coherent digital preservation strategy, so in the future they are planning to create more posts to meet their requirements. They believe that their current preservation policies will not satisfy their needs in the long term.

They pointed out the lack of expertise in their institution, especially IT experts.

They have many plans and projects related to digital preservation that they would like to undertake in the future, but one big constraint is funding.

They would like to experiment with digital preservation file formats, in order to come up with guidelines and recommendations. Their hope is that some day there will be file format specifications readily available and Microsoft free!

Chapter 8: Conclusions

The University of Edinburgh is one of the few HE Institutions that deal with digital preservation issues on a practical level. They are hoping to see more cross- sectoral initiatives in the future. They identify problems that need to be re-adjusted in the organisation, like revising the existing policies and strategies as well as adding more resources related to digital preservation.

As the whole initiative stems from the University Library and the Records Management Department, it is clear that the University of Edinburgh has a solid grasp of records management and archival issues. However one of the problems that came up constantly was the lack of IT solutions.

To remedy this, a very healthy collaboration has been developed between the Library, the Records Management Department and the IT Department. The Records Manager is in the process of developing guidelines on the preservation of electronic records for business purposes, which will be based on the digital preservation recommendations that the Library has already developed, and the whole strategy is going to be supported by the IT department.

The University has been actively preserving its digital data and now they have the knowledge and the support to experiment with new systems and techniques to enhance their existing efforts.

Appendix I: References

CEDARS Project, University of Leeds
http://www.leeds.ac.uk/cedars/.

Digital Preservation Project, University of Edinburgh
http://www.lib.ed.ac.uk/sites/digpres/.

Freedom of Information Act (Scotland 2001)
http://www.hmso.gov.uk/acts/acts2000/20000036.htm.

Code of practice on the management of records under the Freedom of Information
Act, Public Records Office
http://www.pro.gov.uk/recordsmanagement/freedomofinformation.htm.

Copyright Law 1988
http://www.hmso.gov.uk/acts/acts1988/Ukpga_19880048_en_1.htm.

FOI committee group at the Edinburgh University
http://www.planning.ed.ac.uk/FOI/pubbackground.htm.

Appendix II: Preservation Metadata Schema

Content Information	Representation Information	**Structure Information**	- Underlying abstract form Description - UAF transformer; Platform, - Parameters, Render analyse Engines, Output format, Input format
		Semantic Information	- Render / Analyse Object
	Primary Digital object		
Preservation Description Information	Reference	Resource Description	- 6 DC elements - title, subject, description, contributor, rights, and date.
	Context	Related Objects	- Related Information Object. - Relationship - Reference
	Provenance	History	- Reason for creation. - Custody history. - Change history before archiving. - Original technical environments.- Prerequisites- Procedures- Documentation - Size of file. - Significant properties. - Reason for preservation.

		Management History	- Ingest process history. - Administration history. - Action history. - Retention period (EUL).
		Rights Management	- Negotiation history. - Rights information. - Copyright statement - Date of publication - Place of publication - Rights warning- Actors, Actions - Permitted by statute - Permitted by licence
	Fixity	Authentication Indicator	
Packaging Information			
Descriptive Information			

Appendix III: Interview Instrument

ERPANET Case Study

Administrative Section
Interview Details
Organisation Details
Disclosure/Privacy Information
Tracking of Activities

<u>**Perception and Awareness of Digital Preservation**</u>

We would like to begin by asking you a few questions about your general impressions of digital preservation, and the impact that it has on the _____ sector. We will use the term 'digital information' throughout to refer to all forms of digital data, records and information.

Is there a general awareness in the _____ sector that the long-term preservation (more than five years) of digital information is an important issue?

To what extent does the sector recognise the importance of preserving digital information in the long-term?

What are the main problems associated with digital preservation in the _____ sector?

From what sources have you heard about the issues surrounding digital preservation?

What values does digital information have in the _____sector beyond the original purposes for which it was created?

<u>**Understanding How Digital Preservation Affects Your Organisation**</u>

We would like to focus on how some of these digital preservation issues affect your own organisation

1. What type of information is digitally preserved in the short and the long term in your organisation?

2. What are the reasons that digital information is preserved in your organisation:
    ❑ Legal requirements
    ❑ Financial requirements
    ❑ Business requirements (e.g. document important decisions and activities)
    ❑ Historical value
    ❑ Other (Please specify)

3. What risks is your organisation under if digital information is not preserved in the long-term?
    ❑ Legal risks
    ❑ Financial risks
    ❑ Business risks
    ❑ Historical value
    ❑ Other (Please specify)

4. Has the organisation conducted a risk analysis and/or business needs analysis with regard to the preservation of information? If yes, can you indicate the main results?

Actions Taken: Policies, Strategies, Standards and Practices Developed

The questions in this section aim to explore some of the actions that the organisation has undertaken to deal with the preservation of electronic records. It will examine the above as well as selection, preservation, storage, and access activities.

Policies, Strategies, and Standards

5. Is there any collaborative effort across the _____ sector to tackle common digital preservation issues?
    - ❑ Conferences
    - ❑ Newsletters
    - ❑ Journals
    - ❑ Common Institutions
    - ❑ Collaborative Projects
    - ❑ Other (Please specify)

6. Has your organisation attempted to find information external to the sector regarding preservation?
    If yes, please indicate the sources
    - ❑ Government agencies
    - ❑ Higher education institutions
    - ❑ Archives
    - ❑ Libraries
    - ❑ Museums
    - ❑ IT Specialists
    - ❑ Other (Please specify)

    Please specify the kind of information provided and how useful it proved to be.
    _____
    _____
    _____
    _____

7. Do you cooperate with other institutions in the research and development of policies, strategies, and standards? In what way?

8. How useful is this common effort in applying it to your organisation's own needs?

9. Do you have any specific organisational policies that relate to the preservation of information?

10. Who (and what) was/is involved in the creation of these policies?
    - ❑ Management
    - ❑ Employees
    - ❑ Special task force in the organisation
    - ❑ Results of internal analyses (e.g. risk analysis)
    - ❑ External sources, models, advice
    - ❑ Other (Please specify)

11. Do these policies apply across the entire organisation?
12. How are these policies implemented?
13. Has your organisation developed preservation strategies, standards, and practices and implemented them?
    - ❑ Yes
    - ❑ No

If YES, Please specify.

_____
_____
_____
_____

14. How were they introduced and implemented (e.g. by department, with training)?

15. How, and under whose responsibility have these been established?
- ❑ External Advice/Sources/Models
- ❑ Survey of information resources
- ❑ In-house solutions developed
- ❑ Other (Please specify)

16. How often are your preservation policies and strategies updated and renewed?

Selection of Digital Information for Preservation

Do you have a selection policy, or classification and retention policy that determines what information in your organisation is to be preserved?
- ❑ Yes
- ❑ No

If YES, Please specify.

_____
_____
_____
_____

Is your classification and retention schedule linked and implemented across the organisation?

Who is responsible for the maintenance and implementation of these schedules?

How do you ensure that selected information is complete, accurate and identifiable?

Preservation of Digital Information

Does your organisation take care of its preservation activities itself, or are these outsourced?
- ❑ Outsourced
- ❑ In-house

If outsourced, what reasons were behind this decision, and who carries out the preservation activities?

_____
_____
_____
_____

Are there specific individuals in your organisation responsible for the preservation of digital information?

What positions do these people hold in the organisation, and what are their responsibilities and competencies?

What type of training or advice is available for them?

Is your organisation aware of any external standards, best practices, and guidelines available on preservation?
- ❑ Yes
- ❑ No

If YES, Please specify.

_____
_____

_____
_____

Are these specific to your sector?

Where did you learn about them? Please specify your sources.

Which of these standards, practices and guidelines do you use?

What technologies do you use for preservation? For the following list of current techniques, please specify which ones you use and for what kind of information.

Technique	Specify Type/Technology Used	Information Preserved
Print to Paper		
Scanning		
Save on Disk		
Save on Other Media		
Emulation		
Migration		
Microfilm/Microfiche		
Other		

On what grounds were these techniques chosen? Please specify your answers.
External Advice
Trials and Evaluations
Recommendations
Intra-sectoral standards available
Other
Please provide as much information as possible about why these decisions were taken.

_____
_____
_____
_____

What data formats do you use for preservation?
Standard data formats
Others
Please specify for both answers

_____
_____
_____
_____

Do you convert the information to be preserved into other data formats for technical (or other) reasons?

What metadata do you use to describe both your digital information and the processes of storage and preservation? Does it follow any standards available (Dublin Core or others)? Can you provide a copy of the metadata set?

Is the collection and production of metadata automated?

Who is responsible for the transfer of information into long-term storage?

How often (if undertaken) does digital information migrated or refreshed?

Storage of Digital Information

Do you have a particular storage area for digital information to be preserved?
- ❑ Yes
- ❑ No

If Yes, how is this organised and equipped?

_____
_____
_____

Do you keep redundant copies of the digital information to be preserved for safety (or other reasons)?

Access to Digital Information

17. How is information protected from inadvertent or unauthorised access and manipulation?

18. Does your preservation solution allow direct access to the digital information stored (i.e. are they stored in an executable format)? If no, how is the access provided?

19. What access issues does your organisation face?
    a. Copyright
    b. Privacy Issues
    c. Access Security and Privileges
    d. Others (Please specify)

20. How does your organisation intend to provide access to digital information into the future?

Digital Preservation Costs

21. Did your organisation attempt to undertake a cost benefit analysis concerning its investments in preservation?

22. Has this analysis been assessed in light of your actual preservation activities? Did it prove to be accurate?

23. To which section of the budget are the economic resources for your preservation programme allocated?

24. What percentage of the organisation's budget is spent on preservation? Can you compare that to some other area of the organisation's activity?

25. Is the organisation attempting to address amortisation issues in the preservation budget?

26. Are there available sources of funding within the _____ sector allocated for digital preservation issues?
    - ❑ Yes
    - ❑ No

If Yes, please specify

_____
_____
_____
_____

27. Are you satisfied with these cross-sector services?

28. If no, what would you like to see available? [i.e. what would you think could best be solved in common in your sector?] Would you be willing to engage financially in such information?

29. Are there other external sources available for digital preservation activities, (e.g. government grants, cross-sector funds)?
   ❑   Yes
   ❑   No
   If Yes, please specify

   _____
   _____
   _____
   _____

Monitoring of Actions

After having identified what has been undertaken in your organisation with regard to preservation activities, we would like to find out about how these efforts have been monitored.

Is the preservation process audited on a regular basis?

Is compliance to policies, standards, and strategies audited on a regular basis?

Is compliance to other requirements (legal, business etc.) audited on a regular basis?

How often are checks made to the preserved material, (e.g. for signs of deterioration)?

Please specify the criteria used for these audits.

Who performs these audits? (e.g. Internal/External)

Future Requirements

We would like to ask about the areas in which there is a need for additional attention in your organisation and the sector as a whole.

How long do you predict that your current preservation policies, strategies, and solutions will meet your organisation's preservation needs?

Is the amount of money allocated for preservation going to change in the future? Will it need to be changed?

If more funds were available, what could/would they be used for?

What conclusions has your organisation come to about its preservation efforts? Are these satisfactory?

What preservation efforts are remaining to be addressed within your organisation?
Further data to be preserved
Revision and adjustment of preservation policies and strategies
Additional resources dedicated to preservation
Technological solutions
Other (Please specify)

Would you like to see more cross-sectoral or intra-sectoral activity with regard to preservation?

Are there any other areas in which you would like to have more information made available on digital information? Where do you expect this information to come from?

Thank you very much for your valuable contribution.

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