

Experts Workgroup on the Preservation of Digital Memory

- [Rationale](#)
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Documents for Discussion

- [Digital Preservation Charter](#)
- [PRONOM Registry](#) (PRONOM will be presented at the ERPANET Workshop in Vienna 10-11 May 2004.)

Please use the [discussion forums](#) to post comments on these documents.

Documents relating to the Workgroup

- [Firenze Agenda](#)
- [Regulations Dossier](#)
- [Council Resolution of 25 June 2002](#)
- [Digital Preservation Initiatives](#)

Rationale

Following the Council Resolution of 25 June 2002 on preserving tomorrow's memory - preserving digital content for future generations ([2002/C 162/02](#)) and in preparation of the International Conference in Firenze on 16/17 October 2003 under the coordination of the Italian Presidency, an experts workgroup was proposed to check the state-of-art and plan development as needed to implement the resolution principles. The workgroup has been led by the Erpanet and Minerva projects, under the chairing of the European Commission and the Italian Presidency.

In particular, the Council Resolution invites European Commission and Member States to report on current situation and to draw up an action plan as appropriate.

The participants list collects both names of experts involved in the preparation of the resolution or nominated by national authorities through the NRG (National Representatives Group), and names of experts involved in key initiatives worldwide.

The workgroup aims to reach 3 main goals:

- draw a state-of-art of on-going initiatives and exchange of good practice;
- draft a priorities agenda as a starting point to produce an action plan joint by Member States;
- define the basis for building a European network and develop national initiatives.

This first activity was the star-up of a cooperative-process to define priorities and mechanisms to improve coordination and effectiveness of national and sectoral initiatives on digital preservation across Europe.

The work has been finalised into the "[Firenze agenda](#)" and successfully presented at the [Conference in Firenze on 16-17 October](#) under the Italian Presidency. At the same conference, two very interesting studies were presented: one on emergencies for digital memory, and one on the current legal situation on the field across Europe.

After that the agenda has been endorsed by the national representatives of 27

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countries (Member States, Newly Accession States, Russia, Israel) at the 5th NRG meeting in Parma on 19 November. The NRG has endorsed this workgroup activity as complementary with the digitisation issue. Giving support both as experts participation and as network infrastructure and progress promotion.

The workgroup will continue activity after the conference in Firenze in order to feed a cooperation at European level, reinforce awareness and consensus on the initiative. The [Netherlands Presidency](#) in the second semester of 2004, will organise a second conference on digital memory preservation where progress and workplan of the “[Firenze agenda](#)” will be presented and discussed with all the Member States representatives.

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The PRONOM File Format Registry

Records managers are increasingly faced with the challenge of preserving records in digital form, instead of on paper. After decades of preparing documents by computer, the practice of printing them out for filing is in decline, and in the case of government records the old 'print to paper' policy has been formally abandoned. At the same time, records have evolved from simple texts to complex assemblies of diverse elements, including embedded formulae, images and charts, with a corresponding proliferation of file formats. The introduction of Electronic Records Management software may help with the day-to-day management of records but does nothing to simplify the problem of long-term preservation, since the record elements are still held in their original formats and these formats become obsolete with alarming rapidity. The withdrawal of support for old versions of software and their formats is now being soothingly referred to by developers as "sunsetting" – but sunset comes round all too soon for the liking of anyone who has collections of computer records to preserve.

The National Archives is charged with the preservation of records in perpetuity and is addressing the problem of software obsolescence through PRONOM, a web-enabled database of information on file formats and their technical dependencies, including hardware, software and operating systems. PRONOM was launched on the Web in February 2004, and is freely available at www.records.pro.gov.uk/pronom/.

A global registry

Technical documentation of file formats is not easy to acquire, particularly after they become obsolete. The need to establish reliable, sustained repositories of file format specifications, documentation and related software has been recognised as an international issue, and a working group to develop a Global Digital Format Registry has been set up, including representatives of the national archives of the United Kingdom and the United States and several other major institutions. The concept is to create a global network of registries that can be shared by many institutions.

The National Archives developed PRONOM ahead of this initiative, starting in 2001, and we are working to ensure that the two programmes are complementary. We have developed not only our own prototype registry but also an initial collection of content. Our staff have undertaken intensive research and liaison with major software developers in order to create this initial data set; Microsoft and Adobe have been particularly helpful in providing information. The database currently holds details of about 550 file formats, 250 software products, and 100 vendors, and more are being added on a regular basis. We actively encourage the submission of new information for inclusion on PRONOM, and an online submission form is provided for this purpose.

Uses of the registry

Information about digital formats has many uses in a digital preservation programme. As old software products cease to be supported and become obsolete, preservation activity will be needed for records held in the formats that depend on those products. One strategy is the migration of records from obsolete formats to newer ones. Migration paths are already identified in PRONOM, and in future it will also provide a measure of the 'content invariance' of each migration path. This is especially important to maintain the authenticity of digital records. The content must not change, and the appearance of the record should stay the same too. Our intention is to define an objective and rigorous methodology for testing migration paths to measure content invariance, and to record the results in PRONOM. The registry will also tell you when a format is about to become obsolete, and act as a trigger for preservation action.

An example of the hazards of migration is the preservation of WordStar data files. Early DOS versions of WordStar used seven-bit ASCII characters, the eighth bit being used as a line wrap marker. When viewed by later products these characters are wrongly interpreted as eight-bit ASCII equivalents, and to achieve a successful migration it is necessary to strip out the marker bits from the WordStar files. Since line wrapping is handled differently in later products, the loss of the eighth bit normally makes no difference, and at worst causes the text to be adjusted to different margins. This example shows the part that detailed technical knowledge plays in implementing a workable migration strategy, and also the importance of keeping the original bit-streams.

Before you can preserve digital records you have to recognise what format they are in. Automatic file format identification is an important function of a format registry and this facility will be provided in future versions of PRONOM. When records are accessioned, after the bit-stream is copied to archival storage it is necessary to identify the format, and to test that the transfer has succeeded – that each digital object is complete and intact. In this way defective objects can be detected at the point of ingest and a replacement copy requested. The registry will not itself provide validation of records but will provide information to support the process.

Conclusion

Some paper records have survived despite long periods of neglect before they were received into our archives and libraries. If today's digital records are neglected they will not survive, because the ability to interpret old formats will be lost. This problem has been much discussed in the library and archives community, and pessimistic projections have been made of the loss of valuable records of the digital age. In fact the preservation of digital records is perfectly practical so long as early action is taken.

The correct interpretation of records has always required knowledge of the language in which they are written, and sometimes of other subjects too - mediaeval penmanship, for example. Fortunately enough of this knowledge has survived that we can make sense of most of the records that have come down to us. Modern technology has further complicated the problem of interpretation by making the viewing of records dependent on hardware and software environments whose own longevity is doubtful. Just as interpretation of the 1086 Domesday Book depends on the dictionaries and grammars for mediaeval Latin painstakingly compiled by long-

dead scholars, interpretation of contemporary electronic records in the future will only be possible if the necessary methods and tools are compiled, documented and preserved now. The initial Web release of PRONOM is a long step in that direction.

**EXPERTS' WORKGROUP
ON THE
PRESERVATION OF DIGITAL MEMORY**

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FIRENZE AGENDA

17 October 2003

The Italian Presidency, the European Commission, the ERPANET and MINERVA project are the promoters of this initiative in the philosophy of eEurope and linked to the National Representatives Group. The group of experts proposed an agenda with few, focussed objectives in response to the challenges of preserving digital memory. The focus addresses creation, preservation and access issues, including both digitised and born-digital objects. And also respects the interests of museum, libraries and archives, and the differences between media format. The agenda covers a short period (12-18 months) identifying concrete and realistic actions. This process is an open process integrating on-going actions and voluntary efforts of the experts. The experts have identified some initial responsibilities for each of the action, and progress will be reviewed in one year during the Dutch Presidency. The European Commission will submit the Firenze agenda to the National Representatives Group at the next meeting in Parma in November for endorsement and inviting each Member State to support the initiative. Future Presidencies are invited to coordinate the follow-up.

First, what are the problems and risks (Action area 1)? Probably the most important task today is to create awareness about risks and problems among decision-makers at all levels. Second, what initiatives are on-going and what technologies are available (Action area 2)? Third, what legal and regulatory implications and responsibilities must be addressed now and who is responsible at this moment in time to find solutions for digital memory preservation (Action area 3)?

Action area 1: create awareness & cooperation mechanisms

Community and consensus building is the first step. The initial focus is decision-makers. The expert group will work with user communities to capture their requirements and suggestions and develop suitable approaches to address those needs. They will build consensus beyond the current audience, towards professional bodies and establish cooperation with other initiatives in the field. The expert group will report regularly on progress and planning.

- workgroup activity and events, like workshops, seminars, papers, helpdesk and electronic fora;
- report of activity to NRG every 6 months.

Actors: *ERPANET and MINERVA projects as coordinators.*

ERPANET: coordination and web services for the expert group including forum, projects and literature assessment, the help-desk advisory service, erpaEprints; workshops on "trusted digital depositories" (Rome, November 2003); seminar on "scientific digital objects" (Lisbon, December 2003); publication of the workshops and seminars final reports.

MINERVA: network of the national representatives for promotion and for data collection; workshops or seminars or events organisation on the field like Bibliocom on 30 October; NRG report by the end of 2003 including a slot to present progress of the initiative.

DELOS: annual digital preservation summer school; annual state-of-the-art studies from the digital memory preservation cluster.

PRESTOSPACE: workshops or seminars or events organisation on the field; annual state-of-the-art on digital preservation for audio-video archives. Workshop on "user requirements for audio-visual preservation", March 2004, Amsterdam.

Action area 2: exchange good practice & develop a common point of view

Data collection on current practices, selection and promotion of good practice are necessary steps to re-use progress and to develop a common knowledge basis on suitable approaches and technologies. The focus here is to identify the missing 'bits'. Lessons already learned from examples of good practice must feed into tutorials and papers (e.g., on digital collections, trusted repositories, metadata, IPR, selection criteria, web archiving) and must be the basis for specifying a 'European interoperable platform'.

- 'state-of-the-art' on existing initiatives, good practice selection and promotion;
- technology watch reports on emerging issues;
- propose a research agenda on technological priorities and challenges about digital preservation;
- training (skills) initiatives and programmes.
- Stakeholders - users

Actors: *ERPANET and DELOS projects as coordinators.*

ERPANET: data collection and analysis to identify good practices: description and analysis of single and collective case studies and creation of erpatools; promotion of erpaAdvisory services; inform the preservation research agenda (see below).

DELOS: continued review and coordination of the NSF/DELOS Digital Preservation and Archiving research agenda; studies and papers on the field; production of recommendations.

DIGICULT FORUM: technology watch and tutorials on the field; contribution of technology specifications for a research agenda; creation of an 'Action in the Preservation of Memory' section in the Dicult.info Newsletter.

PRESTOSPACE: technology specifications for a research agenda for audio and video archives; production of recommendations. Meeting in collaboration with the FIAT annual conference, on "technical specifications and system architecture for an audio-visual integrated preservation system", October 2004, Marseille.

MINERVA: data collection infrastructure for accumulation of good practice experience; training trials on the longterm sustainability of digitised scientific and cultural objects in cooperation with ERPANET and DELOS.

Action area 3: long-term policies and strategies

Lack of clear reference policies and responsibilities today is a serious risk in the future preservation of our memory. The expert group will stimulate the national/sectoral authorities to develop digital preservation policies, research/training programmes and trials as appropriate. In particular, the legal framework for electronic resources/records collections and deposits may be incomplete, not only for libraries and archives but also for e-government, for educational, for research and other environments of our information society. The adoption of a common agenda could be instrumental in catalysing national efforts on a coordinated framework at the European level and investment in collaborative public/private projects.

- identify reference actors, within the Member States, to act as coordinating bodies for national initiatives and to produce recommendations;
- analyse and compare current legal and regulatory contexts leading to specifications for suitable frameworks for stakeholders, in particular for memory institutions, for permanent access to digital deposits (with particular attention to objects that are "born digital ") and on-line registers of trusted preservation repositories;
- study and propose suitable business models and costs analysis and long term funding strategies for public institutions;
- foster cooperation with emerging international activities such as that being developed under the auspices of UNESCO;
- validate and promote the research agenda at EU and Member State levels with special emphasis on encouraging national funding agencies to allocate resources to enabling research in line with the evolving research agenda;
- the Italian Presidency will lead this area, but it is crucial to have long-term commitment by future Presidencies and Member States authorities.

Actors: *Italian and future Presidencies as coordinator.*

ITALIAN PRESIDENCY: developing the report on risks and emergencies with at least other four cases and the report on legislation and policy frameworks; implementing web site for the initiative and ensuring continuity in cooperation with the future Presidencies.

PRESTOSPACE: Bridging the gap between technical results and service implementation, meeting in Paris, December 2004.

ERPANET: Improving the understanding of the inter-connectedness between e-government and e-citizenship viability and the long term authenticity and integrity of digital entities; provide an annual review of national policies and strategies; enhance and promote policy and legal framework tools.

ACTION PLAN

Action area 1: create awareness & cooperation mechanisms

- workgroup activity and promotion [ICCU-ERPANET-MINERVA]
- web pages creation and events calendar [ICCU-MINERVA-DELOS-ERPANET]
- list of key documents and URLs [ERPANET]
- newsletter with a slot on the experts group activity [ERPANET-ICCU] [the idea is to invite each expert in turn to report about his experience and activity within her/his country]
- creation of an 'Action in the Preservation of Memory' section in the Digicult.info Newsletter [DIGICULT FORUM]
- workshops or seminars organisation on the field [ERPANET-DELOS-PRESTOSPACE schedule]
- annual state-of-the-art on digital preservation for audio-video archives [PRESTOSPACE]
- a slot in the 2nd (Dec.2003) and the 3rd (Dec.2004) NRG report publication [MINERVA- ICCU]
- report of activity to NRG every 6 months [MINERVA- ICCU]

Action area 2: exchange good practice & develop a common point of view

- 'state-of-the-art' on existing initiatives, case studies and erpatools, good practice selection and promotion [ERPANET-DELOS]
- technology watch reports on emerging issues [DIGICULT FORUM]
- propose a research agenda and recommendations on technological priorities and challenges about digital preservation [DELOS-PRESTOSPACE-DIGICULT FORUM]
- training (skills) initiatives and programmes [MINERVA-ERPANET-DELOS]
- annual digital preservation summer school [DELOS]

Action area 3: long-term policies and strategies

- identify reference actors, within the Member States, to act as coordinating bodies for national initiatives and to produce recommendations also about e-government [ICCU]
- analyse and compare current legal and regulatory contexts leading to specifications for suitable frameworks for stakeholders, in particular for memory institutions, for permanent access to digital deposits (with particular attention to objects that are "born digital ") and on-line registers of trusted preservation repositories [ICCU-ERPANET]

- study and propose suitable business models and costs analysis and long term funding strategies for public institutions [ICCU-PRESTOSPACE]
- foster cooperation with emerging international activities such as that being developed under the auspices of UNESCO [ICCU]
- validate and promote the research agenda at EU and Member State levels with special emphasis on encouraging national funding agencies to allocate resources to enabling research in line with the evolving research agenda [ICCU & PRESIDENCIES OF THE UNION]



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*Legislation, Rules and Policies for the Preservation of Digital
Resources*

A SURVEY

Introduction, *Mariella Guercio*
Report, *Lucia Lograno*
Data Analysis, *Ave Battistelli*
Translation, *Francesca Marini*

Florence, October 2003

SUMMARY

Preface, *Maria Guercio*

1. Conceptual and Methodological Issues
2. Report Content: National and Local Regulations
3. Report Content: Internal Policies and Plans of the Digital Heritage Preservation Institutions
4. Conclusion

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1. Goals and Objectives
2. Participating Institutions
3. Research Methodology

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Section 2. Types of Regulations

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Sezione 4. Outsourcing

Sezione 5. Review of Regulations

Part II – Internal Policies and Preservation Plans

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¹ For the appendix see the Italian version of the report.

² The National Archives of The Netherlands have to be added to the list.

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INTRODUCTION

1. Goals and Objectives

This study—which is part of the ERPANET Project and has been promoted by the Italian Ministero per i beni e le attività culturali and by the University of Urbino—aims to analyze the legislation, regulations and policies governing the preservation of digital materials currently implemented in the European countries and in some important international institutions. This analysis presents an overview of digital preservation issues that is only one first step in a relatively new, complex, fragmented and constantly evolving field. The report focuses in particular on some specific aspects of the introduction of regulations aiming to define costs and benefits of a normative multi-level system and of the responsibilities linked to its creation and maintenance, as well as of its related necessary monitoring and revision activities.

Among its overall goals, this study attempts to provide—with the inevitable limitations of a project designed and carried out in just a few months (May-September 2003)—an overview of national, regional and local legislation and regulations, and of the related normative systems developed (or in course of development) in the area of digital preservation. Besides, this study also aims to make available to the interested professional communities an educational tool able to provide support to who intends to regulate in a systematic and coherent way the complex activities related to the preservation of digital materials in the various sectors of cultural production.

An additional goal—which is not possible to thoroughly address here—is to identify and describe the reasons that led a specific country or administration to develop preservation policies and regulations, and also to identify the problems encountered at the development and, even more relevant, at the implementation stage. In regard to this goal, it is important to point out that, although professionally advanced sectors are increasingly becoming more aware of the necessity to regulate digital preservation activities, there exist a series of issues that still are major obstacles to a full and comparable development of procedures and workflow for managing the digital memory preservation function. Among these issues are the lack of consensus at the political and top management levels, the lack of relevant successful implementations, the substantial confusion about the appropriate intervention procedures and methods, the inadequacy of a solid conceptual analysis and the lack of resources and of strong models. The report provides a picture that is still uncertain and contradictory. The study results enable us to point out how complex our journey is going to be, and make us wish, as supported by the detailed data analysis, for an initiative providing guide and orientation in this specific sector, taken by the European Commission in the research projects, financial plans and political resolutions of the European Union representative organs.

2. Participating Institutions

As previously mentioned, the main goal of this study is the review and analysis of the current state of the digital materials preservation regulations at the general and local levels, as well as of the internal policies adopted by single organizations in this field. The

investigative tool identified as the most effective for a study designed and conducted in a very short time was a questionnaire. Although questionnaires have been somehow abused over time, there are no easy alternatives to them in cases like ours, where researchers are pressed for time. The questionnaire was addressed to the people responsible for the most important national European institutions, as well as for the Australian, Canadian and American ones. The respondents were asked to report about their qualified and already implemented digital preservation initiatives. The questionnaire also aimed to gather data that could provide an integrated and relevant picture of the projects under way and, even more important, of the results already achieved. The overall goal was to make possible to compare, at an international level, themes that are still highly undefined.

Due to the short time available to conduct the investigation and in order to achieve relevant results the questionnaire distribution and the data collection have followed multiple parallel itineraries, so to obtain in a timely manner the necessary answers from trusted and qualified respondents within a geographic area as wide and representative as possible, at least of the European territory and of some non European countries that have matured years long relevant experiences in the digital preservation sector. Therefore, in the first place, we administered the questionnaire to the cultural sector European government representatives through Minerva, the proven most reliable network— as once again showed by the results of this study—which revealed itself to be an important “dedicated” communication channel mostly able to reach the entire European cultural system. This first group of contacts was subsequently integrated with more respondents identified on the basis of existing lists prepared by the European Commission for recent (March 2002) preservation experts meetings. Of course, the role and presence of the principal research and cultural heritage preservation national institutions were taken into consideration and the institutions were asked to take part in the study. These contacts were facilitated by the European group created a few months ago specifically for the upcoming Florence, Italy, digital preservation European conference that has provided the input for carrying out the investigation.

The questionnaires returned in the time allowed—most of them received just during the last available week—have been 46³ total: 9 from Portugal, 7 from Italy, 3 each from Finland, France, Germany and Greece, 2 each from Australia, Canada, Lettonia, Sweden and United States, and 1 each from Austria, Belgium, Denmark, Ireland, The Netherlands, Slovenia, Spain and Switzerland. The complete list of participating institutions and countries that made the study possible is published in Appendix B.

³ One more questionnaire has arrived too late to be included in the final analysis: from The Netherlands (Nationaal Archief).

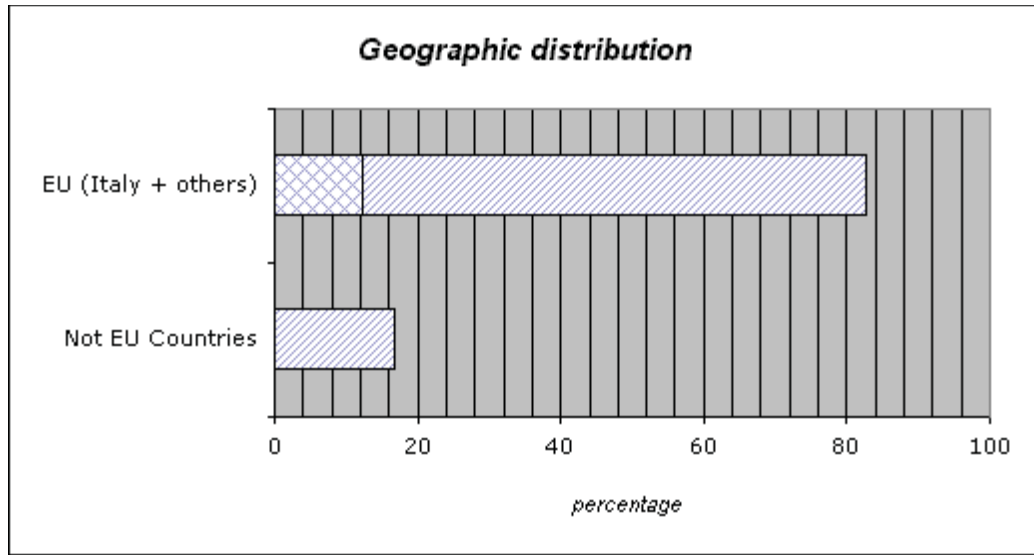


Table 1— Geographical Distribution
(Italy, other European Union countries, non European Union countries)

Portugal stood out for its high percentage of returned questionnaires and, at the same time, gave an essential contribution to the data analysis by providing information on a variety of institution typologies at multiple levels. The Italian responses also made possible a very precise, careful and detailed description of the existing regulations and policies, shedding light on the points of view of entities that are very diverse because they belong to different sectors and have different missions, such as the conservation institutes at the Archivio centrale dello Stato (Italian Central National Archives) and at the Biblioteca Nazionale Marciana (“Marciana” National Library in Venice) as well as some national central research institutes (Centro nazionale per l’informatica nella pubblica amministrazione/National Center for Public Administration Informatics, Centro di fotoreproduzione, legatoria e restauro degli archivi di Stato/State Archives Photo-reproduction, Binding and Restoration Center, Istituto centrale per il catalogo unico/Union Catalog Central Institute, and Cineca-Consorzio Interuniversitario per il Calcolo Automatico dell’Italia Nord Orientale/Northeastern Italy Inter-university Computing Consortium).

France, Sweden and Germany expressed the points of view of archives, libraries and related national administrations; Greece provided information specifically on the university sector. From Finland, responses came from the main institutions preserving cultural heritage in digital form, that is, the country’s national library, national archeological museum (Museovirasto) and national archives. Holding a leading position in archival legislation, the Finnish archives provided a detailed picture of relevant national legislation and policy. The Finnish national library presented evolving rules and regulations, paying specific attention to the issue of electronic material legal deposit; the

library also described its relevant internal regulation development, necessary for a conservation institute that is rich in digital resources.

Most institutions that answered the questionnaire, especially Section 2, provided a complete and articulate picture of regulations both at the national level and at the institutional level, except for the Danish Ministry of Culture, which answered only the questions on national regulations, because the actual preservation of digital sources is not one of its tasks.

Among the non-European institutions, the San Diego Supercomputer Center in the United States has pointed out its role as advanced research center within the activities of the National Science Foundation (NSF) and its support function to numerous government and research institutions in the area of digital preservation, sharing results especially in regard to the definition of preservation methods and procedures. The Center has also suggested contacting specific preservation institutions in the United States for an analysis of their policies and has listed the California Digital Library (CDL), the University of California, San Diego (UCSD) Library, the Library of Congress, the National Archives and Records Administration (NARA) and the National Historical Publications and Records Commission (NHPRC).

Australia and Canada have provided very detailed information both about national regulations and internal institutional regulations and policies. Slovenia and Switzerland have both presented the point of view of their national archival administrations. These two countries have been so accurate and detailed in their answers that the picture they provided has made available enough elements to allow a meaningful comparison with the situation in the European Union countries.

Finally, it is important to point out the contribution of Latvia, which provided in a single document answers regarding two different institutions (the Ministry of Culture and the National Library).

As it may be seen in Table 2, the participating institutions have mostly been national public administrations (32%), followed by some local/regional archives (30%), local libraries (22%), museums (4%) and, finally, some special collections (2%); another 10% is represented by other types of coordinating and/or research institutions that cannot be easily grouped and clearly defined by disciplinary sectors: the Portuguese Institute for Library Science Studies, the University of Patras Information Systems Laboratory, the Companhia Nacional de Bailado in Portugal and the San Diego Supercomputer Center in the United States.

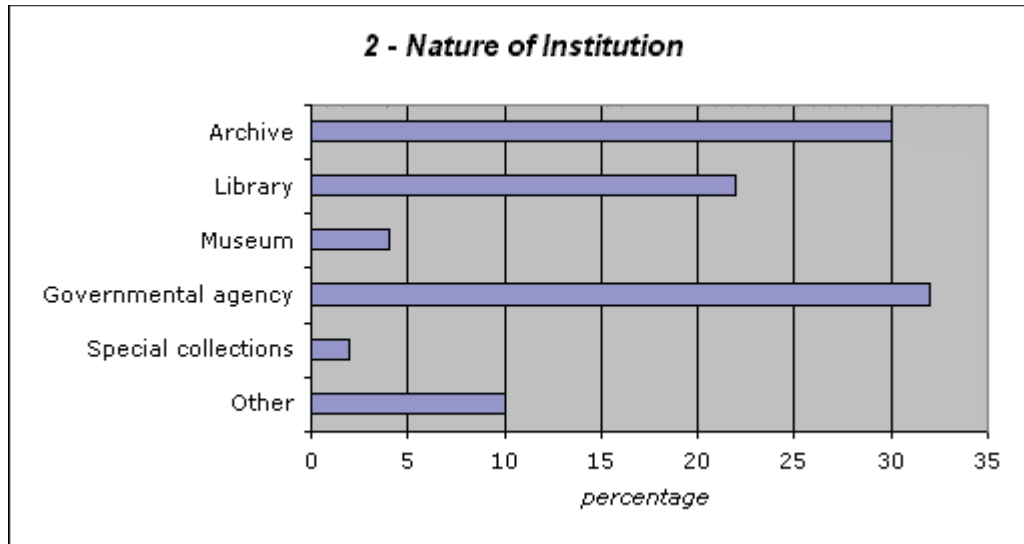


Table 2 —Types of Institutions

The high number of national and state administrations (90%) has provided qualified and trustable information in regard to Section 2 of the questionnaire, which covers national/regional/local regulations and legislation.

3. *Research Methodology*

The questionnaire (Appendix A) has been designed as an operational tool to gather specific and up-to-date information on the examined topic and it has been sent via e-mail in the months of June and July 2003. The questionnaire has a three-section structure:

1. General Questions
2. National/Local Rules
3. Digital Plan and Policy at Institutional Level

Section 3 is addressed to every institution preserving digital materials and specifically examines some aspects, principles and criteria related to the development of digital preservation regulations and policies: costs, requirements, roles and responsibilities, monitoring and revision activities.

Exceeding the most optimistic initial expectations, 46 responses came in, as mentioned above, representing all European Union countries, as well as Australia, Canada, Latvia, Slovenia, Switzerland and the United States. Such a positive result has also been achieved thanks to the help of the digital preservation working group created with support from the European Commission for the upcoming European Conference in Florence, Italy. The responses underwent an accurate analysis and preliminary

comparative data processing. What emerged from the data analysis, as it will be discussed later in this report, is the difficulty of comparing and evaluating situations that differ greatly among each other, both in their sector typology (library, archival, audiovisual and museum heritage) and in their organizational and juridical contexts. Although detailed and exhaustive, the answers did not always take the same approach when discussing the same themes. This different take on the answers is due to a series of specific critical issues inherent to the investigated topic and also to the investigative tool. Regulatory interventions are fragmented (especially in regard to technical regulations within each sector) and tackle digital preservation recommendations from the standpoint of initiatives that have very diverse goals, as it happens, for example, with the regulations governing e-government and ERMS (Electronic Records Management Systems). In some areas, such as legal deposit and copyright, the regulations apply to more countries at the same time and therefore may be comparatively evaluated more precisely and with less room for misunderstanding. The analysis of the data provided by the third section has been even more complicated, due to the specific links that the data have with the particular organizational and functional structure of each repository and institution. In these cases, the data analysis has been cautious and a description of the quality of regulations has been chosen over a quantitative analysis.

PART I. REGULATIONS AT NATIONAL/REGIONAL/LOCAL LEVEL

Preface

All the legislative and regulatory initiatives currently in place, and specifically aimed at digital preservation, are often based on the will and the intention of each country to develop clear conceptual structures, to outline standards, procedures and responsibilities, and, finally, to support institutions—at the national, regional and local level—in the development of their preservation plans and strategies. The issue of digital preservation, though, is still so new that many countries still do not have legislation and regulations to refer to.

As shown in Table 3, the study results show that digital preservation regulations at the national level exist in 46% of the countries that participated in the study (Australia, Denmark, Finland, France, Germany, Greece, Italy, Latvia, Portugal, Slovenia, Sweden, Switzerland and United States), while regional and local regulations have not yet been developed in 38% of the cases examined.

As a sign of the extent of the preservation problem, it has to be pointed out that not every institution has been able to describe the specific regulations existing at the national level.

It is also important to point out that such difficulty in the inquiry may also arise from the fact that the existing regulations are quite fragmented and unfocused, often included as part of technical dispositions that are unknown even to professionals who are involved in preservation, but not in standardization activities. Furthermore, in this context the meaning of regulations and dispositions is also uncertain, often leading to multiple interpretations. The French ATICA, for example, has listed a “digital preservation guide,” which has not been mentioned in any of the responses from the other French institutions that also answered this section of the questionnaire. The Italian institutions, too, have not always mentioned some regulations (the mandatory documentary procedures management manual, including accessioning activities and specification of preservation standard formats) that yet establish obligations and procedures in this context. Another important issue is that regulations are often generic (as mentioned, for example, by the Schweizerisches Bundesarchiv and by the Ministry of Culture of Latvia⁴), or only partially apply to digital materials (Dutch National Library), or make no explicit distinction between digital and non-digital formats (Australian National Archives).

The Irish National Archives answered that they do not currently have an actual law that specifically applies to digital materials: the “National Archives Act” (1986), in fact, includes all records produced by public administrations, independently from their format, affirming a general principle that is positive in theory, but is potentially counterproductive in practice, because administrators have come to believe that the Act only applies to paper records and therefore has to be ignored when it comes to electronic records. This interpretation creates great risks for digital materials and, instead of expanding legislative protection, it actually ends up limiting it.

⁴ Several national legislative acts have been implemented in Latvia, such as the cultural landmarks protection law, the museum law, the library law, the archives law, the copyright law, the Ministry Cabinet regulations, and more.

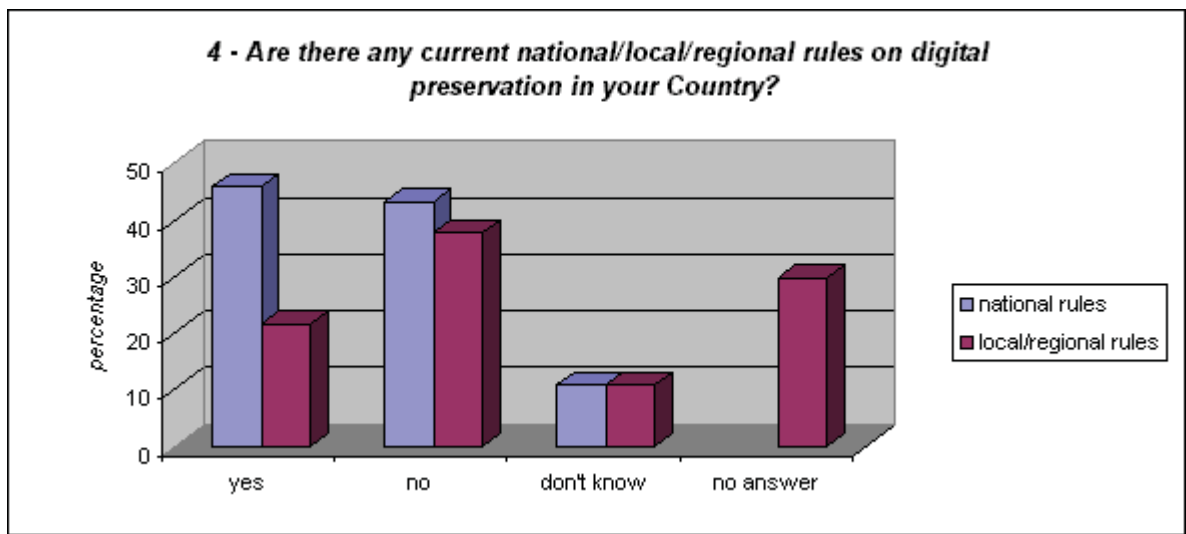


Table 3—Existence of National/Regional/Local Digital Preservation Regulations

The digital preservation regulations currently implemented are, as indicated by 58% of the institutions (see Table 4), insufficient, inadequate, unclear and incomplete. In particular, the regulations are considered insufficiently detailed in their description of the digital materials that need to be preserved (Dutch National Library). Even when digital materials are described, preservation specifications are omitted, formats are not defined, procedures that guarantee readability and long-term access are not detailed (Portuguese Archeology Institute) and not all sectors are always covered. Both the Danish Ministry of Culture and the Public Record Office of Victoria (Australia) have an overall good opinion of their national regulations. On the other hand, the Central State Archives (Italy) say that the specific regulations (Aipa act 42/2001), relying too heavily on technological mechanisms, such as the widespread use of digital signatures to guarantee records integrity and identity, are insufficient in relation to the complexity of the preservation problem. The Archives suggest that there should be further development of the aspects linked to the quality of records creation and management procedures, so to make the records system overall more reliable.⁵ The Finnish National Archives and National Library have declared that the Legal Deposit Commission has completed a proposal for

⁵ Italian archival records preservation regulations are quite fragmented. The DCPM October 31, 2002, promulgated in order to implement electronic records management dispositions, has established some general principles relevant to preservation: it is mandatory that electronic communication systems ensure readability and accessibility over time of the records sent; for the exchange of records and related electronic files the XML format is required and a specific DTD is defined—a sort of metadata schema for records management in the archival environment. Furthermore, the role of digital preservation officer is created, defining, although with many flaws, a mandatory professional profile assigned—maybe in a redundant manner—to the specific function of electronic records and digitized surrogates preservation in every public administration.

new measures on legal deposit that will abrogate the measures currently implemented—the Legal Deposit Act and the Act on Archiving of Films—and that aims to cover not only traditional paper publications, but also audio and audio-visual recordings and films, as well as all Finnish electronic publications available through open networks and radio and television programs.

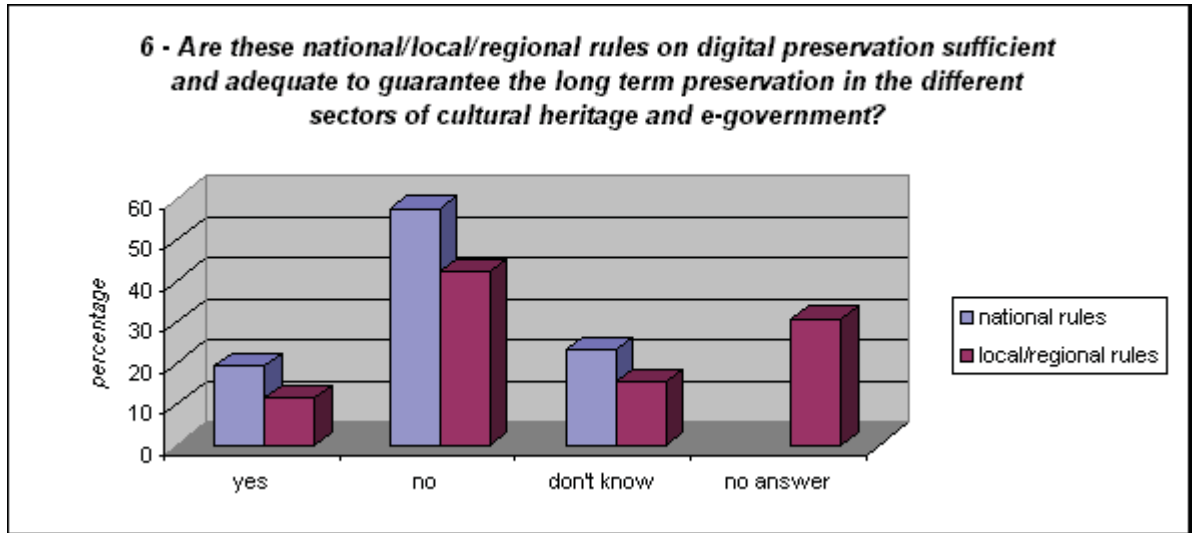


Table 4—Degree of Adequacy of Digital Preservation Regulations

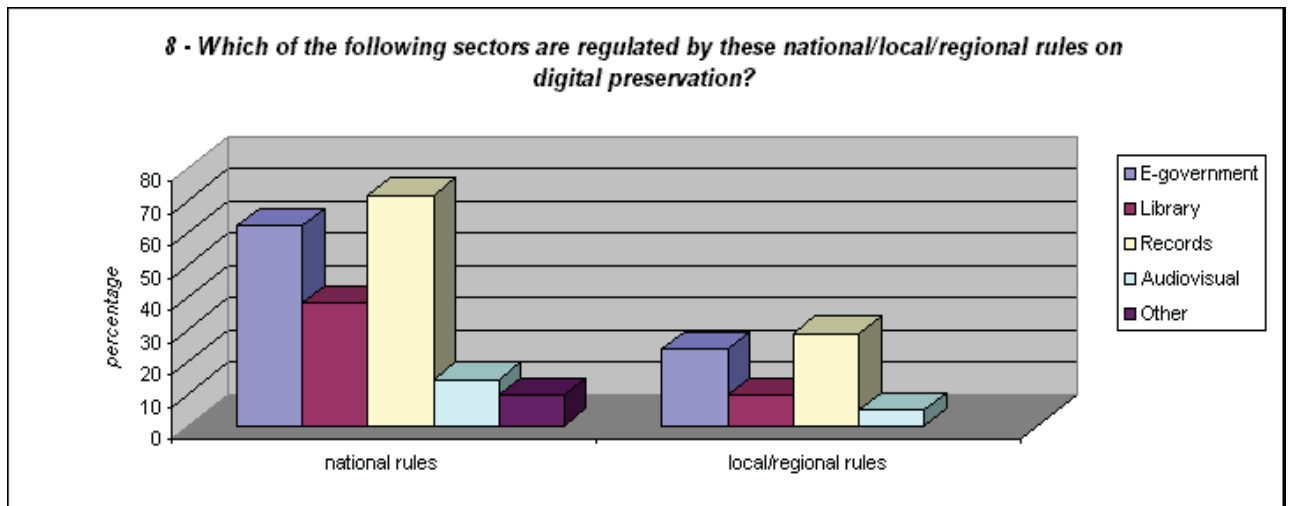


Table 5 – Sectors Ruled Through National Regulations

Currently, considering the insufficient development of digital preservation policies and the constantly increasing amount of digital materials created, 75% of the

participating institutions (Table 6) have explicitly expressed their need for the promulgation, as soon as possible, of coherent and specific regulations at the national level. In particular, the “Marciana” National Library, the Central National Library in Florence, Italy, and the Portuguese National Library have all expressed their pressing need for regulations that discipline both the deposit, in the conservation institutions, of electronic sources published online and offline and the deposit of digitized materials. The Canadian National Library and National Archives take a different position and consider more useful to make available a general reference framework, rather than promulgate regulations. Most of all, they consider important to increase funding and to raise the level of awareness and knowledge of digital preservation and of best practices. They acknowledge, though, that inside the National Library Act there exist regulations governing legal deposit of some electronic publication typologies, for preservation and access purposes.

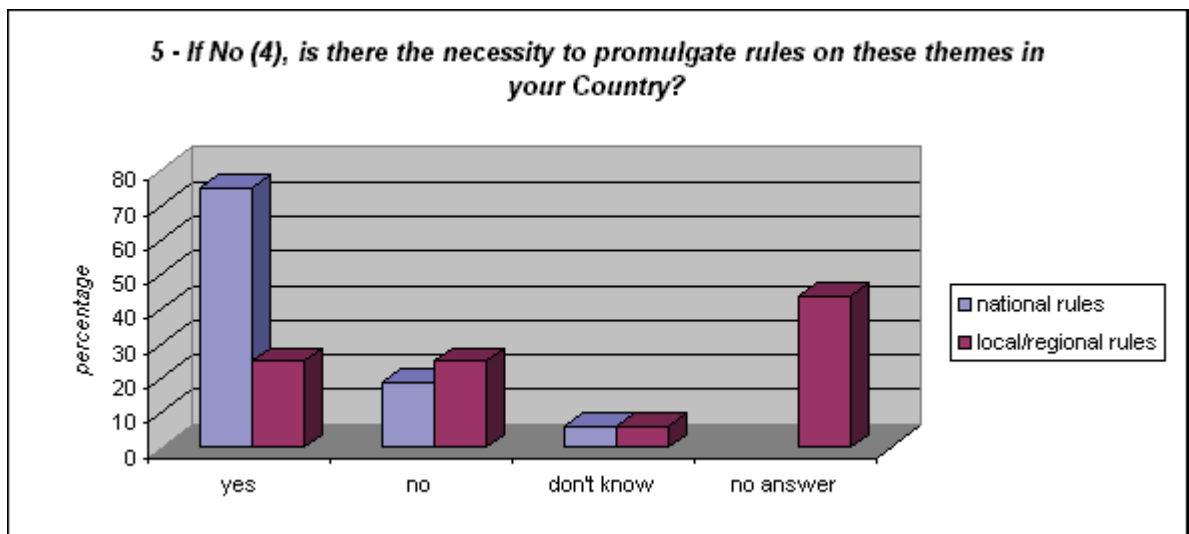


Table 6—Need to Develop Digital Preservation Regulations

Section 1. Roles and Responsibilities

The governing bodies in charge of protecting cultural heritage (representing 75% at the national level and 21% at the local and regional level, as shown in Table 7), as well as the agencies and committees dealing with e-government, are often the ones involved in promulgating digital preservation regulations at both the national and regional and local levels.

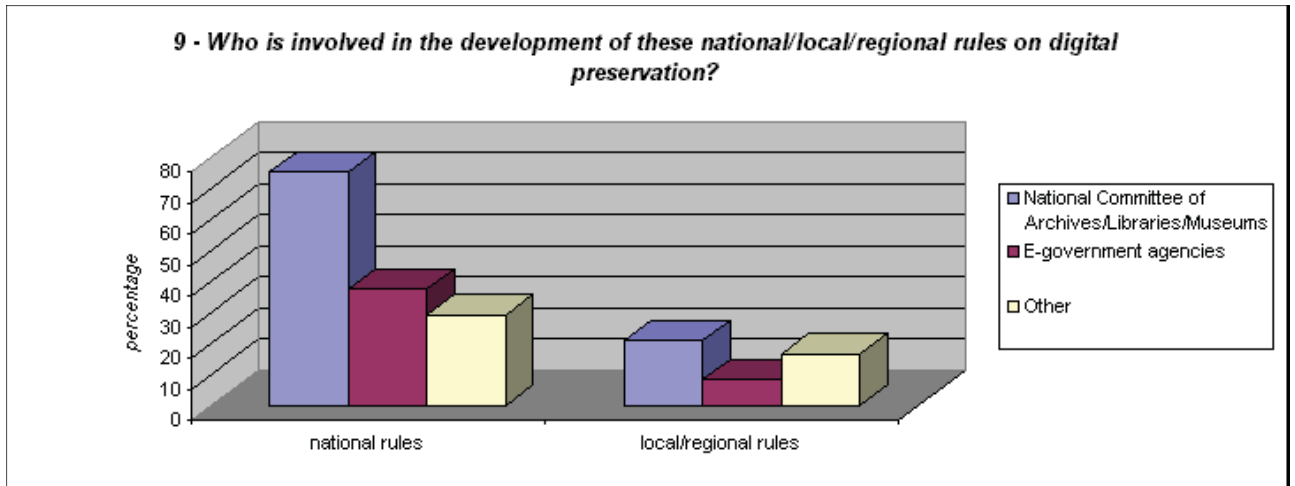


Table 7—Groups Involved in the Development of Digital Preservation Regulations

The information, quite detailed in some cases, provided by the participating institutions in regard to the responsibilities for defining digital preservation regulations, once again shows great variation, which is also determined by the characteristics of the institutions answering the questions. In some cases, technical responsibilities have been identified as part of the tasks assigned to governing bodies and to organizations in charge of cultural heritage, both at the general level and for specific sectors. In other instances, answers have pointed to specific institutions, especially for e-government activities or for scientific research sectors. It is of course not possible, here, to give a detailed account of this area.

It is equally complicated—and maybe not that relevant, also because of the non-uniformity of the responses—to describe the characteristics, the required skills and the role of the people and organizations in charge of preservation. We will therefore only provide some examples of the diverse situation that emerged from the data. In Italy, the types of requirements for the archival sector are technical and documentary,⁶ as established by article 61 of the dpr 445/2000, a decree concerning the officer responsible for the Servizio per la gestione informatica dei documenti, degli archivi e dei flussi documentali (Service for records, archives and records-flow electronic management). In Germany, officers in charge of preservation activities for both traditional and digital materials are the ones who manage archival repositories. These professionals are required to have a general knowledge of Information Technology and to hold technical qualifications, such as system administrator. In Canada there are not specific regulations, but a recent policy on Management of Government Information (MGI) has identified precise areas of responsibility for administrations involved in Information Management at

⁶ In Italy, according to the information provided by the Centro nazionale per l'informatica nella pubblica amministrazione (CNIPA) (National Center for Public Administration Informatics), in order to increase digital preservation officers' level of knowledge, training courses are periodically organized, although their operational quality is deemed inadequate by the organizers themselves.

the national level (Treasury Board Secretariat, National Archives, National Library, and Statistics Canada) and at the level of single organizations.

Section 2. Types of Regulations

The outcomes of the data analysis carried out for this study have shown (Table 8) that currently 64% of the participating countries have not yet promulgated regulations governing the creation of reliable and secure (trusted) digital repositories, although some institutions (Dutch National Library, San Diego Supercomputer Center in the United States) said that these regulations are in course of development. The Public Record Office of Victoria (Australia) has pointed out that such repositories are subject only to regional and local regulations. Switzerland said that these kinds of regulations are required, in the archival field, only for archival materials preserved at the federal and cantonal level.

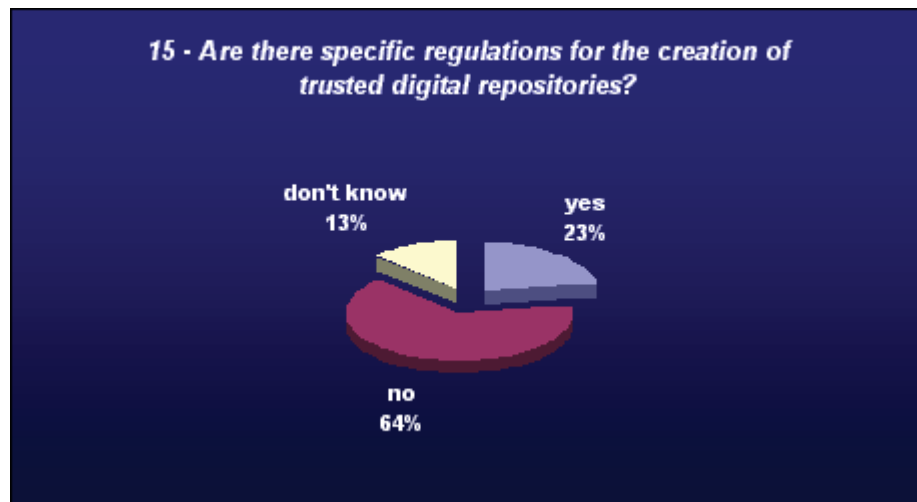


Table 8—Existence of Regulations Governing Digital Repositories Security

In regard to specific regulations promulgated in order to ensure that the preserved digital information be complete, accurate and identifiable, the data (Table 9) have shown that countries have only worked toward this goal at the national level (59%). Canada has specified that it has not yet promulgated these kinds of regulations, although the requirements for completeness, accuracy and identity of materials are currently part of the MGI policy mentioned earlier. Canada has also pointed out that there is an increasing awareness among institutions of the need to prepare shared metadata lists for various administrative sectors, and, furthermore, that the National Archives are expecting administrative structures to move towards the adoption of classification systems based on functions rather than subjects.

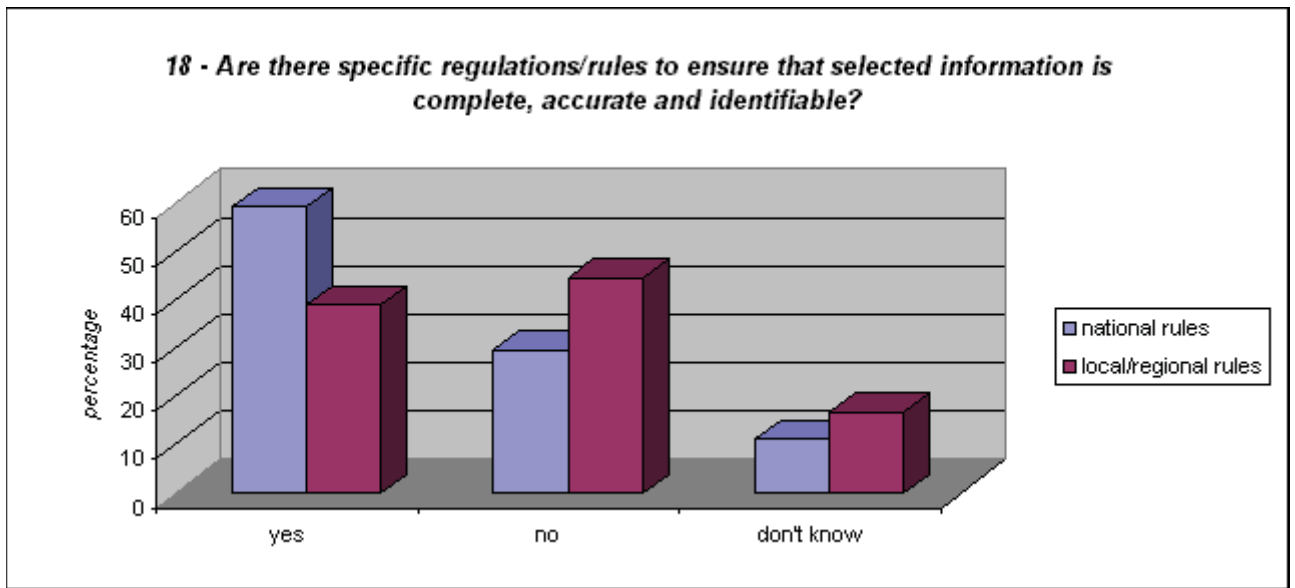


Table 9—Existence of Regulations Ensuring Completeness, Accuracy and Identity of Preserved Information

Currently, both at the national (47%) and local and regional levels (47%), there are not yet—according to the data gathered (Table 10)—rules and regulations mandating that the institutions develop internal policies specific to their plans of action. The Dutch National Library stated that, within its experimental project dedicated to the permanent preservation of digital materials, *Digital Preservation Tested*, specific guidelines are being developed. Canada pointed out that the National Archives provide this type of guidelines for managing the various aspects of archival record-keeping. It also pointed out that the National Library follows international standards (such as the *Anglo American Cataloguing Rules*) and provides appropriate information to the Canadian library community. In Italy, the dcpm October 31, 2000, explicitly mandates the legislative obligation, for all public administrations, to develop an internal management manual. This manual has to carefully regulate the activities of registration, classification and archiving of records and, because of its detailed degree of analysis, is has to become a first significant step towards quality certification of the administrations' actions in the documentary sector.

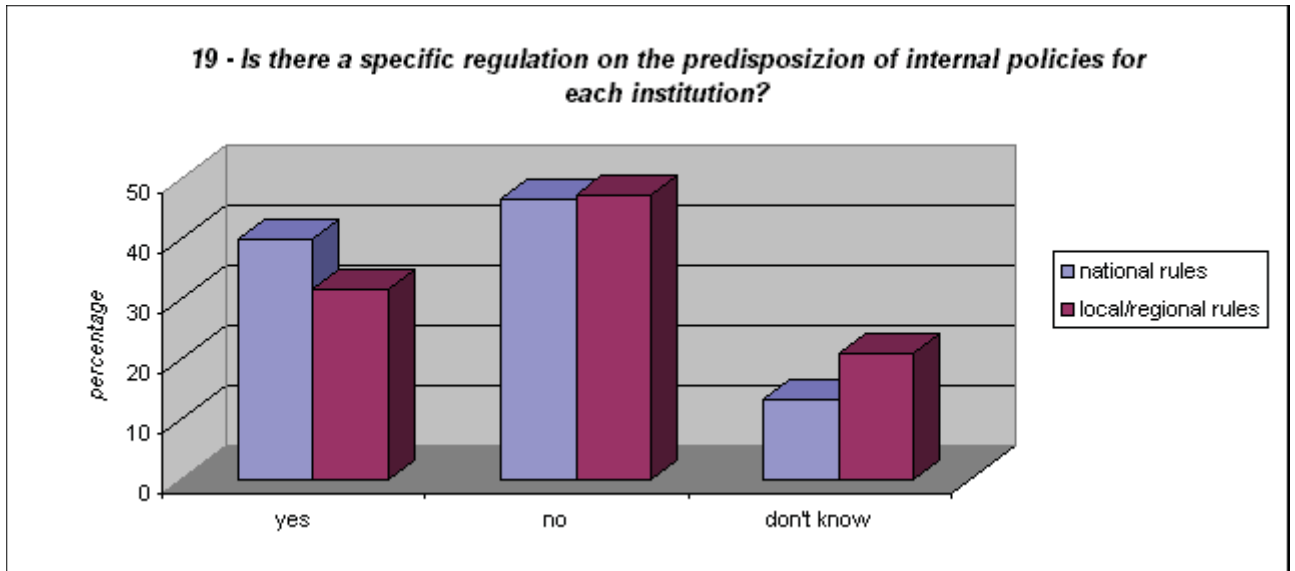


Table 10—
Existence of Regulations Governing Institutions' Internal Guidelines Development

Section 3. Standards

Digital materials preservation regulations should also address adoption and development of standards for electronic media, digital data formats, organizational policies and data exchange. The study has shown that, currently, among the participating countries only 8% (for national regulations) and 4% (for local and regional regulations) have said to have regulations in place that identify general standards or standards specific to each field of application (Table 11). In regard to the field of application, the data analysis showed that, in most countries (88% for national regulations, 50% for local ones), regulations mostly define standards for digital data formats (Table 12), followed by standards for media, policies, and, only in a few cases, for metadata, and for physical and logical formats required for permanent preservation.

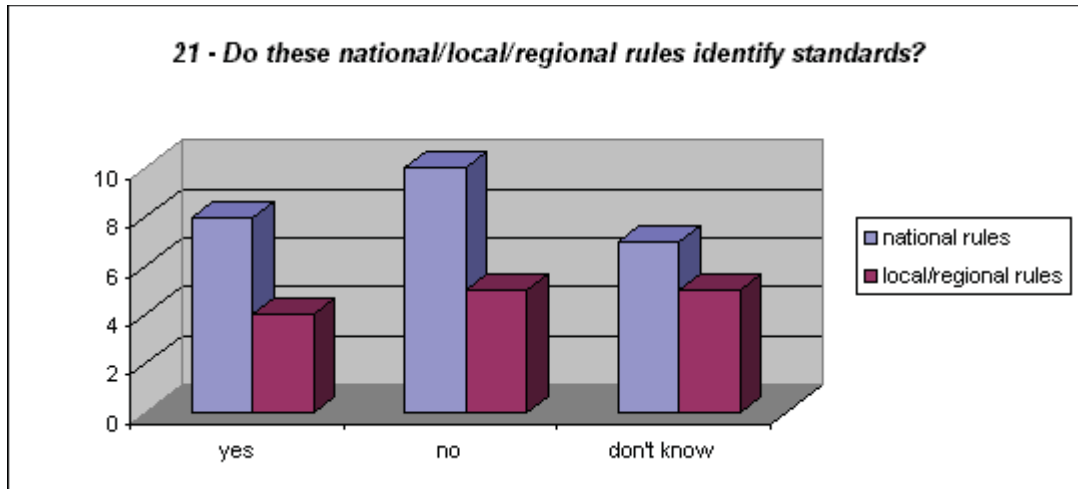


Table 11—Existence of Regulations for Standards Identification

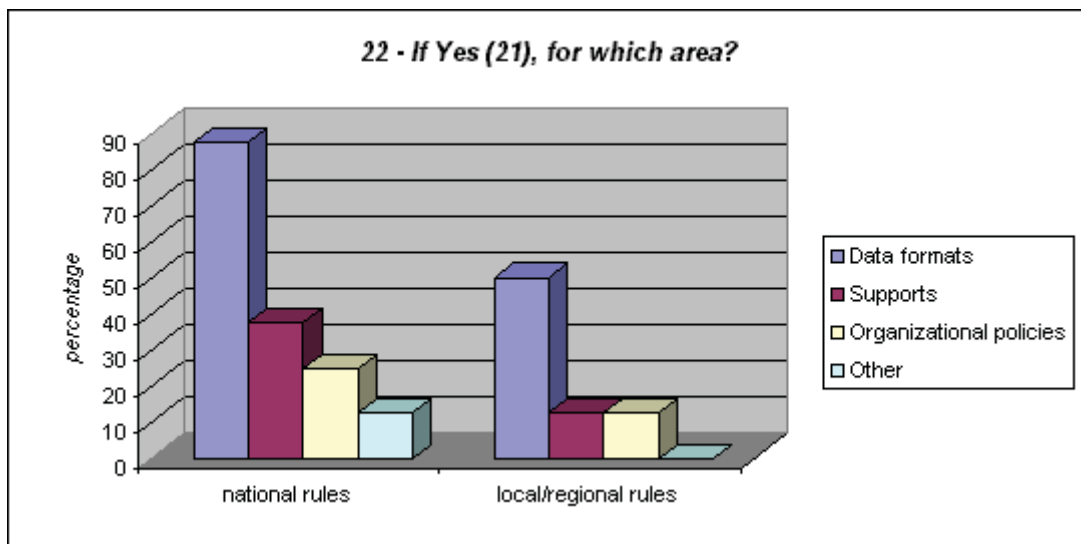


Table 12—Areas of Standards Application

Section 4. Outsourcing

In relation to outsourcing, according, respectively, to 64% and 68% of responses, national and local/regional regulations do not currently address correct digital materials management and preservation (Table 13 and Table 14). It may be observed, within these percentages, that at the national level only 12% of countries—including United States, Greece, Australia, Germany and Ireland—forecast the development of such regulations in the upcoming future, while values tend to increase at the local/regional level.

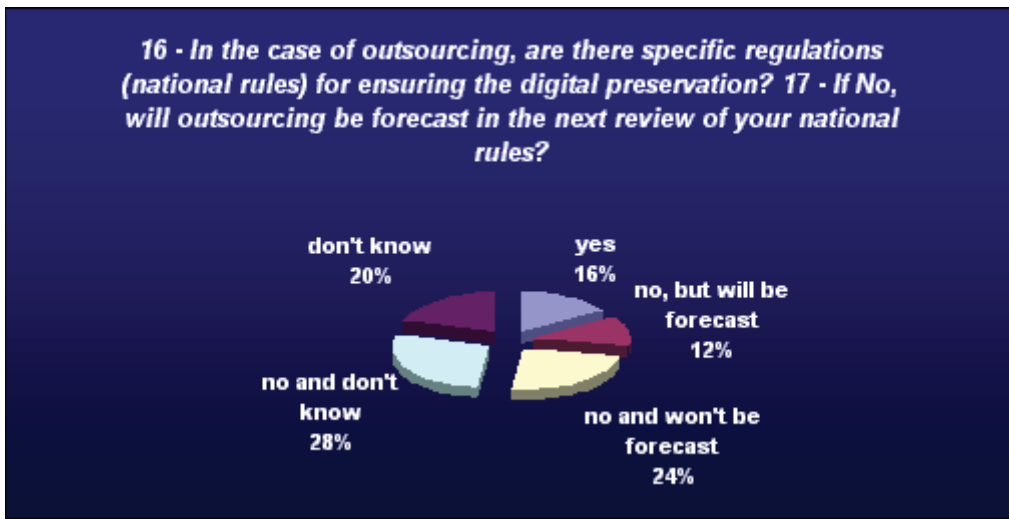


Table 13—Existence of National Digital Preservation Regulations in Case of Outsourcing

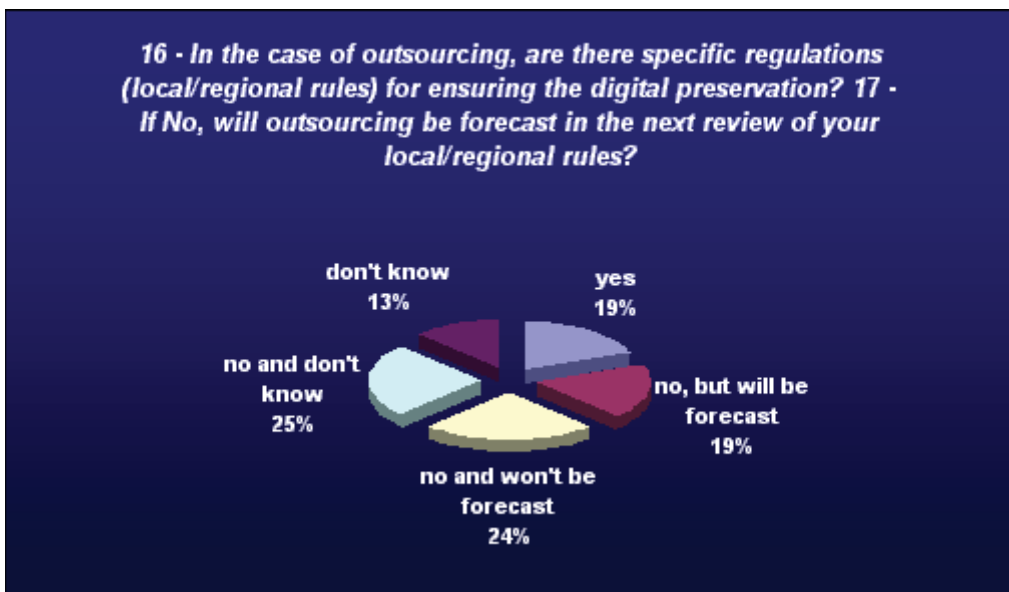
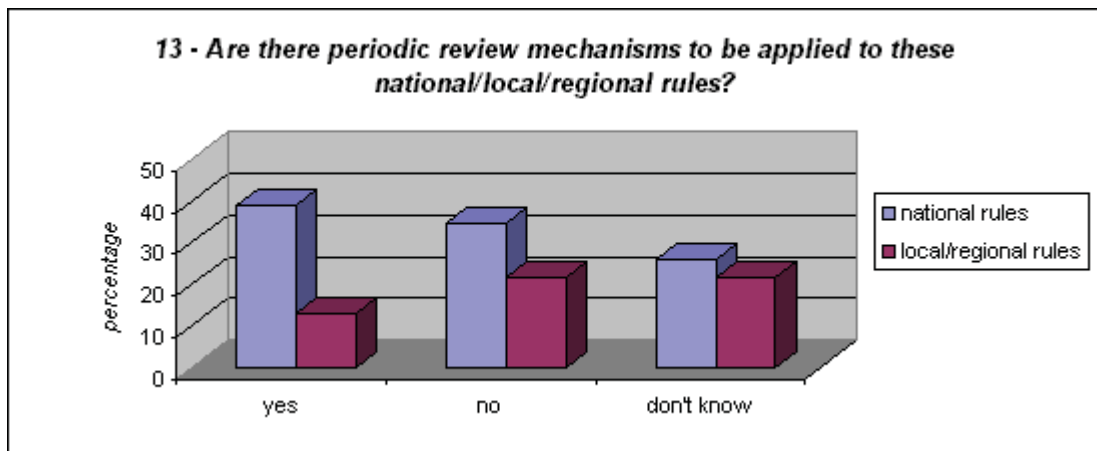


Table 14—Existence of Local/Regional Digital Preservation Regulations in Case of Outsourcing

Section 5. Review of Regulations

The responses show a high degree of uncertainty about the existence of review mechanisms to be applied to digital preservation regulations. Some contradictions have been found within the responses of single countries, presumably caused by the different points of view and sectors of the respondents. What clearly emerges from the data is that, in this area, the national and local regulations of each country are destined to lose their

validity in a short time, due to the ongoing technological changes and to the organizational transformations that often occur as a consequence. Switzerland pointed out that regulation review procedures are part of the more general updating process of the activities of the Federal Archives and National Library. Italian regulations governing electronic records management (dpr 445/2000 on administrative records, dpcm October 31, 2000, approving the related application rules, and Aipa technical regulations on replacement reproduction and digital preservation) have already been repeatedly modified in the last few years and include a specific rule requiring updates at least every three years.



As shown in Table 15, at the national level periodic review of regulations is carried out in 39% of countries, while at the regional and local level it only occurs in 13% of cases. In Australia, for example, review mechanisms are in place only for local and regional regulations, which are rarely updated, though. In France there are national regulations, reviewed every year. In relation to review frequency (Table 16), it may be observed that the countries that update their regulations often are still only a few and therefore not enough to provide a sufficient amount of information to evaluate. The countries that intervene in this area only from time to time are in fact 60% for regulations at the national level, and 20% for regulations at the local/regional level.

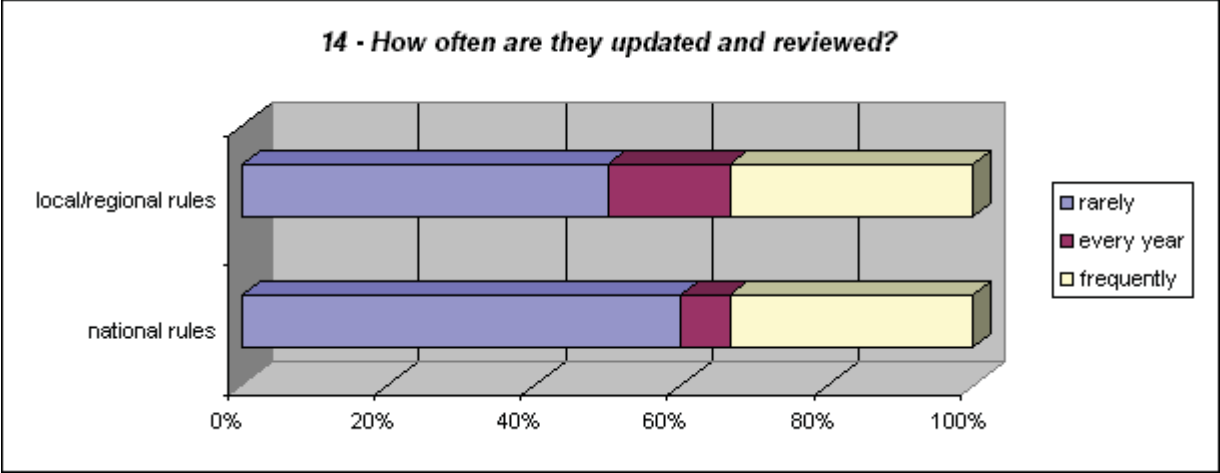


Table 16—Frequency of Regulations Review and Update

PART I. INTERNAL POLICIES AND PRESERVATION PLANS

Preface

For reasons that have already been discussed in the introductory chapters of this study, it is not simple to unambiguously define the characteristics and functions of organizations' internal regulatory tools, such as policy guidelines that identify procedures and workflow aimed at governing the institutional digital heritage preservation.

In order to better define the field of inquiry and to shed light on the margin of error in the interpretation of the data gathered through the investigation, it is important to clarify that the expression “policy for digital heritage preservation” is used here to include in its meaning: a preservation plan and a set of internal guidelines of the preservation institution, which allow to tackle with different degrees of detail the activities, tools and resources used to secure the digital materials preservation.

The main goal of such a plan is, overall, to guarantee the materials' authenticity, reliability and long-term access, and to provide, at the same time, an internal authoritative guide to the institution in all the activities and tools required to achieve satisfactory results within the institution's mission.

In particular, a policy document, besides pointing out the positive role of the preservation function within the institution's needs, should be able to answer a set of basic questions:

4. What to preserve
5. Why preserve (in accordance with both the general and specific goals of the institution)
6. For how long
7. How

On the characteristics and specific content of preservation policy documents—a topic for which only a limited amount of literature and some examples exist—ERPANET⁷ has compiled an orientation tool, published here as an appendix, that describes the typical structure and the function of each main component of a policy document, and summarizes writing guidelines and main characteristics.

A policy document, at least according to what has been experienced so far in this developing field, should follow a basic model that makes it:

- self-explanatory, persuasive in the way it presents its effectiveness and validity, and clear in illustrating the advantages it promises,
- feasible, operational and easy to update,
- flexible in response to the need of addressing, in an adequate and timely manner, the rapid and frequent organizational and technological changes,

⁷ See also the materials used in the ERPANET Digital Preservation Policies Seminar, held in Fontainebleau (January 30th – February 1st, 2003): www.erpanet.org (*erpaseminars*). Some of the seminar presentations have been expanded and published in *Archivi e Computer* 1-2 (2003).

- clear and rational in presenting its specific content,
- easy to understand, yet conforming to high quality standards,
- verifiable and verified through a constant monitoring activity defined according to planned interventions that take into account the organizational, juridical and technological changes.

The questionnaire section about policy has applied to 19 institutions, representative of an extended geographical area and of a variety of organizational functions:

1. Australia:	National Archives of Australia
2. Australia:	Public Record Office of Victoria
3. Belgium:	City Archives of Antwerp
4. Finland:	National Archives
5. France:	Centre des archives
6. France:	French Space Agency (CNES)
7. Germany:	Ulm Municipal Archives
8. Germany:	National Library
9. Germany:	Federal Archives
10. Ireland:	National Archives (under development)
11. Italy:	Cineca
12. Latvia:	National Library
13. The Netherlands:	National Library
14. Portugal:	Centro Português de Fotografia
15. Portugal:	Companhia Nacional de Bailado
16. Sweden:	Riksarkivet
17. United States:	National Archives and Records Administration
18. United States:	San Diego Supercomputer Center
19. Switzerland:	Schweizerisches Bundesarchiv

The available sample is clearly too small to allow a comparative analysis and to identify the most relevant characteristics of tools that are emerging from a new tradition and have only recently been implemented. The available information, though, has made possible a preliminary analysis and the development of some general considerations that might be useful for future initiatives.

Overall (see Table 17), 49% of the responses sent by institutions that are directly in charge of preservation, has, for example, shown the total absence of the organizations' internal regulatory tools. This is a quite relevant—although negative—outcome, especially if we look at it in light of the increasing and constant growth of digital materials housed at the institutions. We could speculate that the negative answers to the section on “Digital Preservation Policy” might have arisen from the fact that the term used (policy) is ambiguous and that the questionnaire was not accompanied by a glossary unambiguously explaining some terms and components that may be too idiosyncratic and linked to very specific sectoral and juridical elements. In this regard, other difficulties have also arisen from some specific questions. However, the overall outcome remains significant and should be reflected upon for future European Union initiatives. During

this preliminary phase of analysis we may attempt to identify reasons and relevance of the outcome.

What emerges in the first place is that even the institutions that are mandated to manage and preserve the community's cultural and scientific heritage do not always view as an essential requisite the need to design and systematically apply clear and well defined guidelines and procedures aimed at preservation. The fact that there is not an explicit obligation, at the regulatory level, mandating to draft a policy on digital materials preservation, makes the policy tool entirely optional and therefore scarcely used. Finally, we can point out that the technical and organizational aspects of the problem are highly undefined and this fact does neither promote nor make easy a systematic and well-structured intervention, inevitably too rigid in relation to a constantly evolving practice, such as the type of intervention that would be required if internal management guidelines and procedures were approved, monitored, verified and advertised.

Even when internal policy tools exist, the users degree of satisfaction appears to be quite low: only a 17% says that the tools fully meet the institutional needs, a 6% defines the tools as inadequate, while the remaining 28% considers them just adequate. It is useful to point out here the answer of the Dutch National Library, which has defined its plan as the best possible in the given conditions, since, in particular, it considers the state of the technologies available for digital preservation projects still largely insufficient. This institution has also remarked—taking an appropriate pragmatic approach—that in this context the expression “current needs of the institution” should be exclusively applied to the need of safeguarding the preserved heritage, therefore employing all available procedures and techniques.

The European Union countries satisfied with their policy are Belgium (City Archives of Antwerp) and Germany (Federal Archives), while Portugal (Centro Português de Fotografia) and Sweden (National Archives) have expressed a negative opinion on its actual usefulness, validity and effectiveness. Overall, most of the institutions fit within the 28% of answers expressing a moderately satisfactory opinion on their available policy; in particular:

- Finland: National Archives
- France: Centre des archives, CNES
- Germany: National Library, Ulm Municipal Archives
- Italy: Cineca
- Portugal: Companhia Nacional de Bailado

The data provided by non European Union countries show that, with the exception of the National Archives and Records Administration in the United States, every institution has expressed a positive opinion of its internal policy.

Sweden (Riksarkivet) has explained that the reason why its policy does not entirely meet the current needs of the institution is the lack of funding allocated for this function; on the other end, the San Diego Supercomputer Center in the United States has pointed out that it is not directly part of its mission to manage digital materials: its main function is to manage the technological growth, with specific attention to migration issues.

33 e 34 - Does your Institution currently have a formal digital preservation policy? If Yes, how well does this policy meet your Institution's current needs?



Table 17—

Existence of Digital Heritage Preservation Policies and Adequacy to Institutional Needs

The Australian archival administration (National Archives of Australia) has pointed out that it does not want to make a distinction between internal policies on digital materials and internal policies on materials in other formats: “Another major factor is that our preservation policies, and our policies in general, are format neutral. In our policies we don’t differentiate between digital and non-digital records. It’s in the actual procedures that we make distinction, and there only if there is a need.”

Section 1. Advantages

The correct definition and design of internal digital materials preservation guidelines requires the institutions to do an accurate study of their current situation and to make a remarkable effort, especially in relation to the human resources and funding that from time to time have to be adequately organized and employed. Nevertheless, it provides a series of advantages that contribute to further demonstrate the efficiency and effectiveness of the policy guidelines right from their first implementation.

The main advantage sought, through the drafting of specific policies, by almost every institution responding to the questionnaire (90%), is basically to make sure that its digital materials remain always available and accessible—readable and understandable—

in every circumstance, non just in the immediate present, ma also in the long-term future. The institutions' approach and goals reveal awareness of the fact that a policy tool cannot be conceived as an isolated, independent and definitive entity (even for a limited time). A policy should be a strategic document that—right from the moment of its drafting and approval—may open the way to new interventions and initiatives and may almost always imply—but not necessarily—the planning and development of coherent and valid programs, strategies and operational measures for the protection of the digital resources to be preserved. The policy should also positively and dynamically interact with the many management activities of the institution. The specific outcome of the inquiry on the expected benefits has confirmed what has just been said and has shown that most participating institutions consider the development of a policy document—specifically the document internal to each institution—as a most important action that goes beyond the particular goals declared. This action, in fact, offers the opportunity to systematically and coherently define specific technical guidelines, in relation to the organization and regulation of the activities and processes linked to digital preservation and to the identification, in each category of materials, of the properties and significant attributes that need to be preserved, and of the related responsibilities.

During the data analysis it emerged that for almost 50% of the institutions the approval of a policy mostly means taking responsibility for the digital materials to be preserved, while for a 40% policy adoption represented, within each institution, the chance to implement the idea—too often discussed, but too rarely put into practice—that to invest with awareness and responsibility in the digital future means, in the first place—if not exclusively—to secure, in the current phase, a solid foundation for the memory of the present.

The Public Record Office of Victoria (Australia) has specified, beyond the choices given in the questionnaire, that an additional advantage is securing that always and in any circumstance the interoperability of the preserved digital materials be protected. The Canadian National Archives and the Canadian National Library among the further options chose the one indicating the need to have available a tool allowing to effectively and continually communicate their commitment in this area (“communication of commitment”). The Riksarkivet (Sweden) clarified that its policy is defined within a detailed set of regulations that gives autonomy to the single organizations to choose the modalities that they consider appropriate for achieving the specific goals of the policy tool, the limitations of which are defined elsewhere.

49 - What are the advantages of having a digital preservation policy?

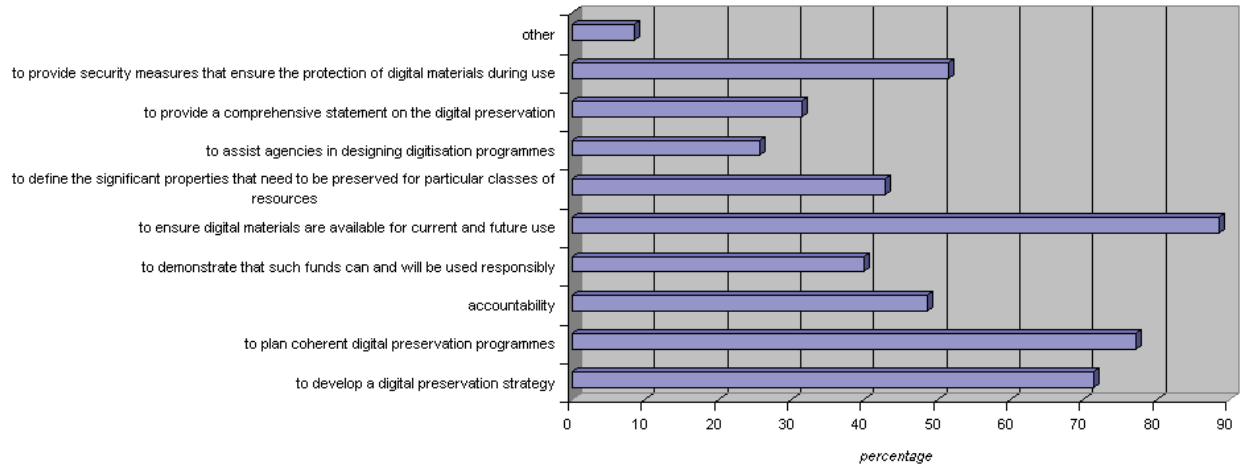


Table 18—Advantages of a Digital Preservation Policy

Section 4. Contextual Influence

A digital materials preservation policy should, in the first place, mirror—has it has been repeatedly pointed out in this report—the way in which the organization operates, specifically in relation to its basic requirements and needs. From the inquiry (see Table 19) it came out that, in 25% of the participating institutions, institutional needs are at the foreground and greatly influence the content and design of each internal policy.

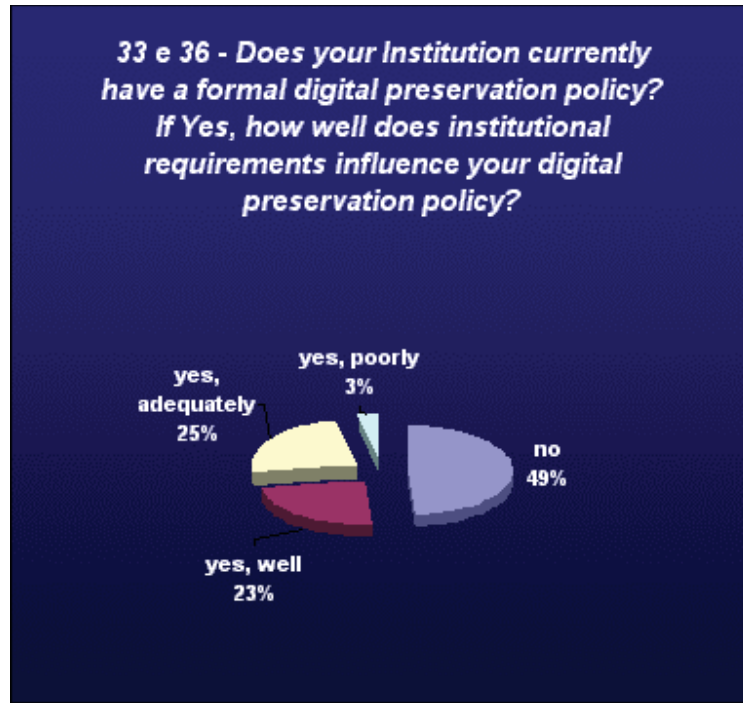


Table 19—Influence of Institutional Needs on Policy Development

The reasons determining policy development (Table 20) may therefore be mostly traced back to institutional needs, which, based on the data analysis, are in most cases identified with the need to secure, for historical purposes, the heritage integrity and accessibility (78%), respectively followed by juridical requirements (50%), administrative requirements (33%) and financial requirements (17%). Specifically about the juridical requirements, the Riksarkivet (Sweden) has referred to what the public sector national legislation has established, also in relation to technical regulations and guidelines. Further specifications (17%) differ among each other: the San Diego Supercomputer Center in the United States and the French Space Agency (CNES) respectively indicate researchers' access needs and value of scientific heritage.

43 - If Yes (33), which of the following reasons has been more relevant for your Institution to develop a digital preservation policy?

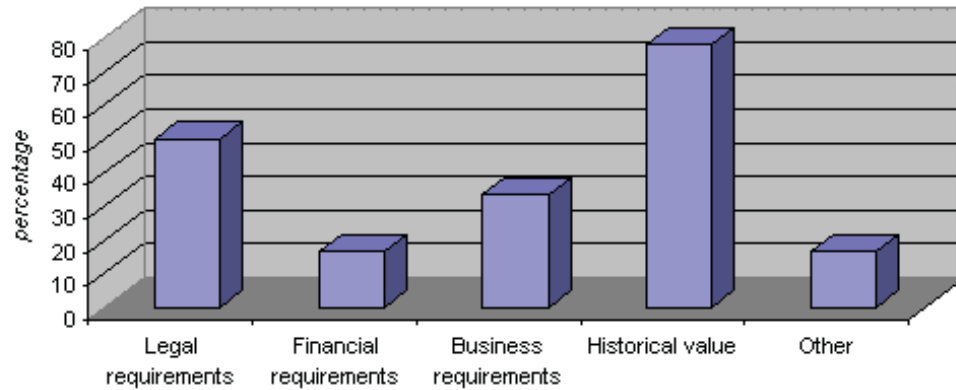


Table 20—Reasons for Policy Development

The specific administrative context of each institution greatly influences policies in this sector. In some cases (as for the Dutch National Library) policy is considered an essential part of the organization’s institutional mission. In regard to the importance of national regulations, the situation is strictly linked to the specific nationally legislated state organization, in the relationship between central organs and local and peripheral structures of the country. Some institutions (for example, the Ethnomusicology Institute of the Slovenian Research Center, and the Portuguese Archaeology Institute and Institute for Library Heritage) do not have to be rigid or act in an automatic way when applying in their policies the regulatory principles expressed at the national level. On the other hand, these principles heavily influence the content design of other institutions’ plans (for example, in Italy, where a detailed structure for the documentary procedures manual and very precise digital preservation technical rules are required, and in also France, in relation to digital formats regulations). The Australian National Archives have explained that no specific digital materials preservation rules exist and that the existing rules applicable to records management have a strong influence, in indirect form, also on long-term preservation. The Portuguese National Library and the City Archives of Antwerp (Belgium) pointed out that their policies adhere to some specific regulations, such as copyright, security and privacy, more than to general rules.

It is important to point out the approach of the Canadian institutions, which emphasized their opportunity to use regulatory frameworks and guidelines rather than detailed regulations. A diversified situation is also present in the United States, as exemplified by the answers of the National Archives, which evoke the specificity of a situation that does not have a unified national legislation, but allows each Federal Agency to regulate its particular sector.

Section 3. Policy Contents

According to the specific needs of every institution, each digital materials preservation policy should include as part of its content a more or less in-depth and exhaustive discussion of a series of issues mostly related to:

- definition of standards and procedures to adopt, and of the responsibilities and criteria for quality control implementation,
- description of procedures for acquisition, selection and deposit of the materials to be preserved long-term,
- rules for conversion, migration and reformatting.

The study results (Table 21) show that currently the 19 institutions with a policy in place have been mostly interested in discussing and tackling the section on digital materials deposit (88%), while the section that is absent in most cases and that requires the filling of substantial gaps is the one on policy access and diffusion (59%).

Some institutions, as, for example, the Bundesarchiv (Germany), the Riksarkivet (Sweden), the Dutch National Library and the Schweizerisches Bundesarchiv have complete policies covering all the issues here listed so far. The Riksarkivet pointed out that the only issue that is not covered by its policy (but that should be covered) is the one concerning the description of digital materials acquisition and selection procedures.

The Dutch National Library pointed out that the lack of adequate technologies has prompted it to actively participate in the major international initiatives taken in this field, with the specific goal of identifying, in a short period of time, technologies that may enable long-term access to digital materials. In relation to the technical solutions adopted so far, the institution has pointed out that deposit is managed separately from access functions, although materials are preserved in operational formats and online access is allowed for newspapers only. The Australian National Archives made a different choice in regard to this issue: records are kept in preservation format in an offline repository. Access is ensured by making available, in the reading rooms, the materials in a standard format, together with the necessary reading tools—similarly to what happens with traditional records. The data show that 2/3 of the participating institutions currently provide direct access to their digital materials. Institutions in this category include: the Riksarkivet (Sweden), the National Library, the Federal Archives and the Ulm Municipal Archives in Germany, the Companhia Nacional de Bailado and the Portuguese Center for Photography in Portugal, the City Archives of Antwerp in Belgium, the Finnish National Archives, the National Library of Latvia, the San Diego Supercomputer Center in the United States and the Public Record Office of Victoria in Australia.

As it may be seen in Table 21, the data from the participating institutions show a quite positive situation in regard to the degree of in-depth and focused discussion of the issues included in the policy. Percentages, in fact, are always above 50%.

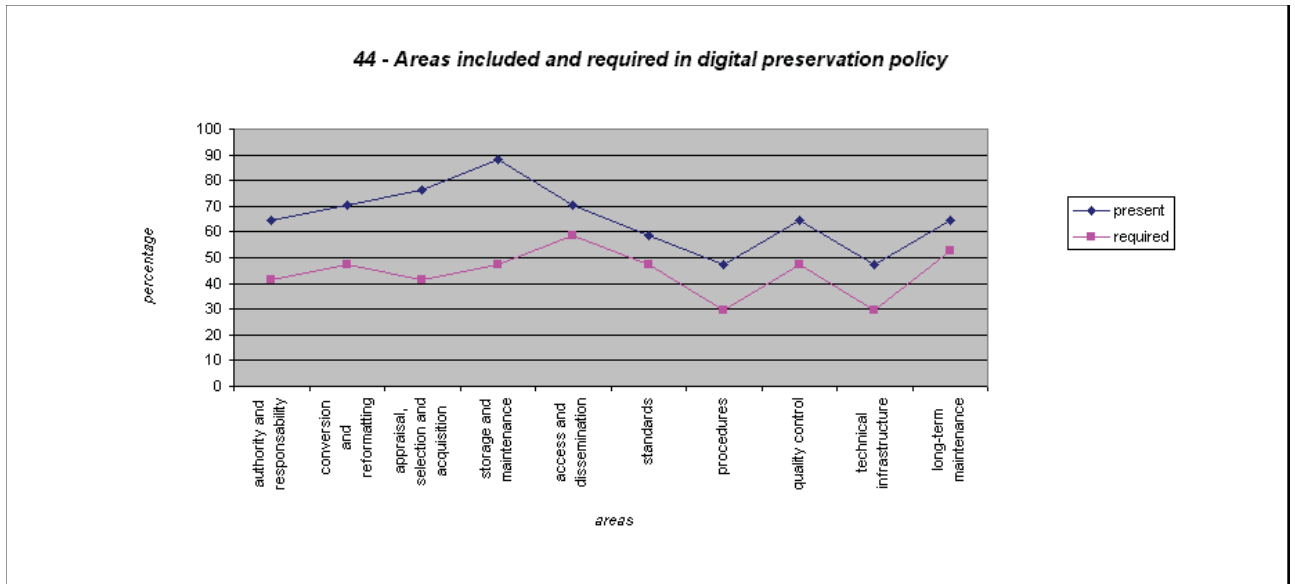


Table 21— Issues Included and Required in a Digital Preservation Policy

As mentioned earlier, guidelines and plans should include a specific section on the definition and regulation of conversion, migration and reformatting procedures. In particular, in regard to the choice of the most appropriate preservation methodology or strategy, the study results have shown that all administrations that answered the questionnaire, with the exception of Greece (Aristotle University of Thessaloniki), always conduct a preliminary study and analysis of the impact that these methods/strategies might have on the digital materials in relation to: intellectual integrity (authenticity and reliability), access, security, readability and interoperability. In regard to the adoption of preservation strategies (reformatting, refreshing, migration, emulation, bundling), the participating institutions said that they mostly use migration (88%), refreshing (76%) and reformatting (71%). The Dutch National Library stated that its policy includes all of the strategies and methods discussed, but that each actual choice depends on specific needs and technical requirements. The Australian National Archives have specified that digital records conversion uses the XML format and that a specific presentation program is subsequently used. In this case, electronic records are destined to undergo migration through different hardware platforms, while software migration happens only once.

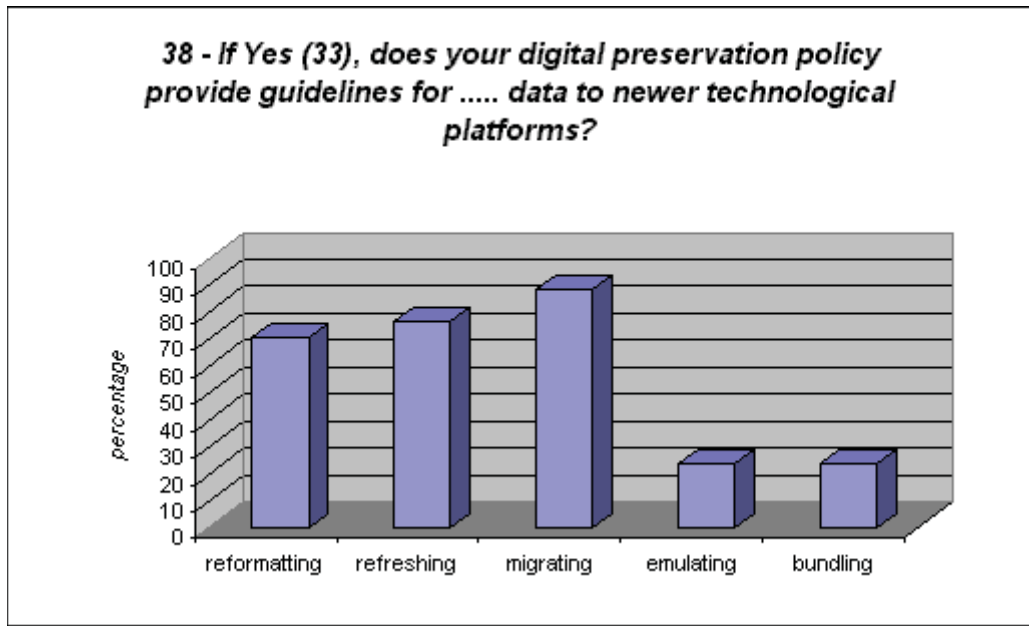


Table 22—Digital Materials Preservation Strategies

Section 4. Roles and Responsibilities

The development of digital materials preservation guidelines requires that the institutions identify specific responsibilities for both maintenance and revision, as well as for monitoring of policy documents. As shown in Table 23, the administrations identified as main responsibilities the ones concerning: the presence of focused internal task forces (12%), external resources for consulting and support (10%), management responsibilities (11%), and human resources for ordinary activities (10%). From the examined cases (Table 24) it emerges that, when developing their plans, experienced professionals often act alone in developing appropriate organizational and technical solutions. The ones who have a lower degree of expertise mostly rely on the review of external literature. Finally, the ones who only have average knowledge still develop internal solutions, but, at the same time, rely on external information, consulting, and models.

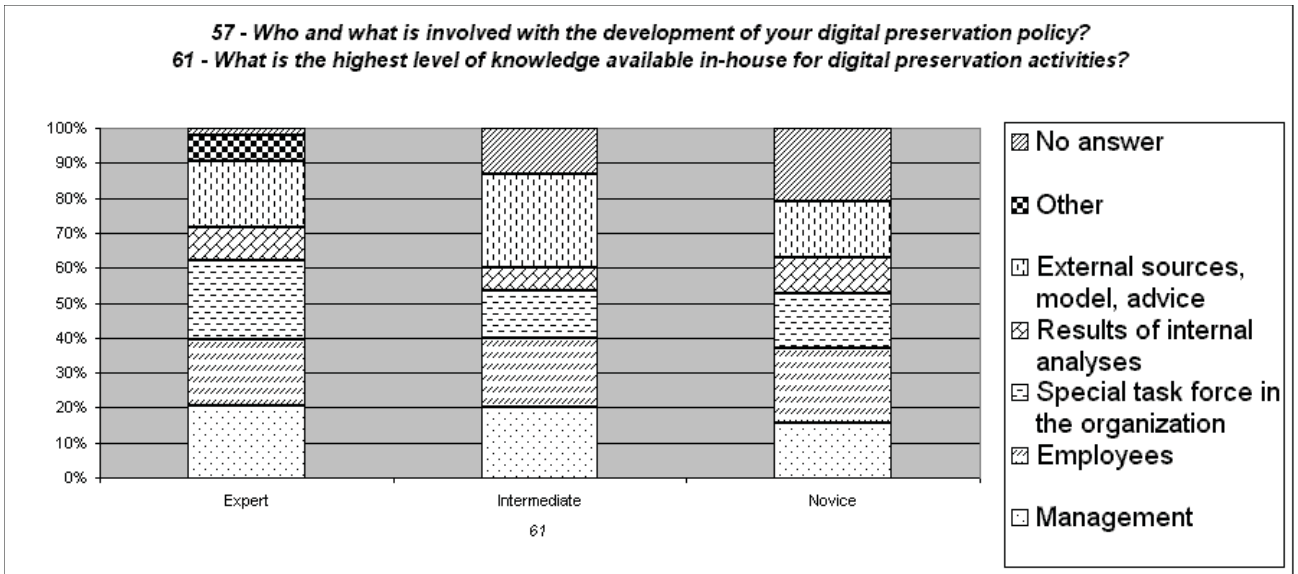


Table 23—Responsibilities for Digital Preservation Policy Development/In-house Knowledge for Digital Preservation Activities

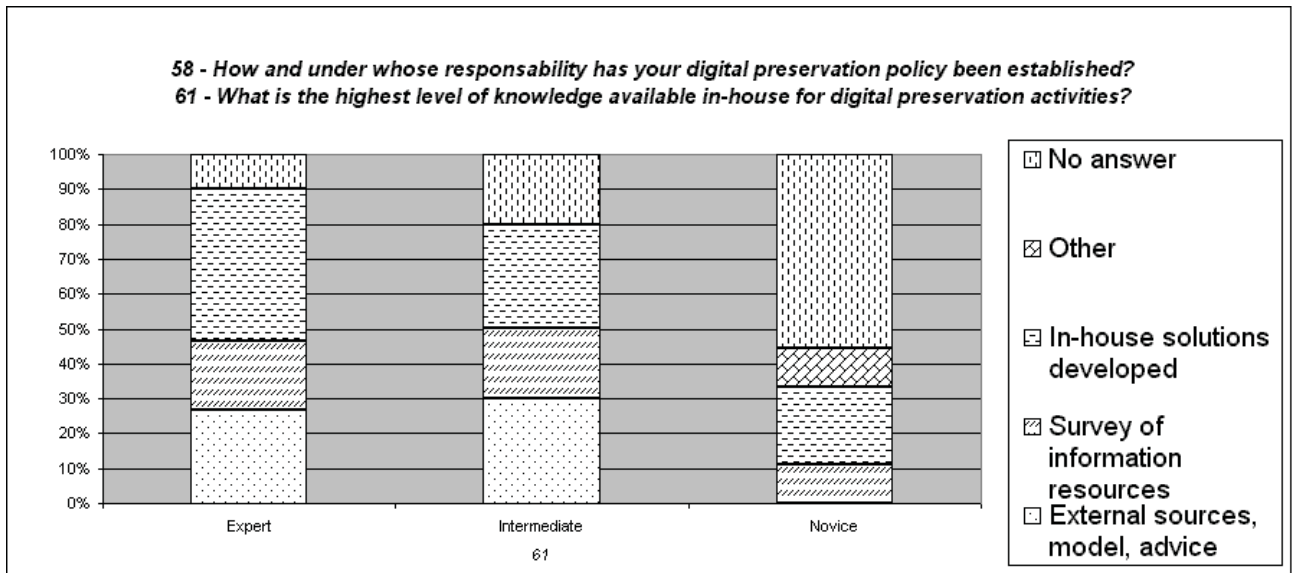


Table 24—Responsibilities and Modalities for Establishing Digital Preservation Policies/In-house Knowledge for Digital Preservation Activities

The study has shown that, currently, 53% of the institutions use external consultants. The Schweizerisches Bundesarchiv has specified that it relies on these procedure for development activities only, while the San Diego Supercomputer Center

considers this option has an actual chance to cooperate with other national institutions, such as the National Archives and Records Administration (NARA), universities and companies. Furthermore, the data (Table 25) show that institutions want to increase the level of expertise of their staff/working group in regard to digital preservation, through specific training in the digital field or general courses taught by external consultants. Other ways to enhance expertise include taking part in international workshops, working groups and conferences (as in the cases of the Dutch and of the Australian National Libraries) and cooperation with other institutions (according to the France Space Agency). The Australian National Archives have specifically pointed out the increase of staff's technical expertise obtained by rotating personnel from section to section, including the digital preservation and internal research development sections.

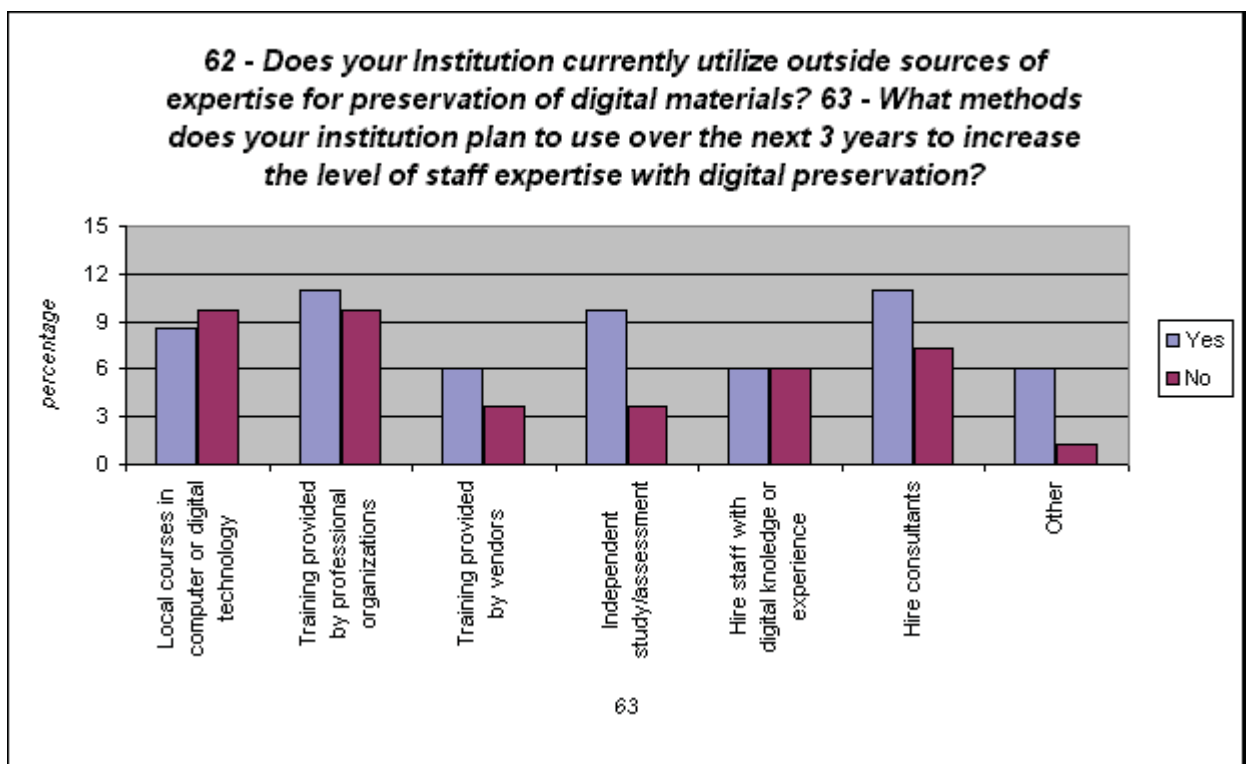


Table 25—Acquisition of Technical Expertise and Ways for Updating It

Section 5. Cooperation and Collaboration

Most institutions—both European and international—often engage in collaborations to develop guidelines, principles, criteria and research projects that may support various countries in the development of standards and of national, international and organizational strategies. Almost all participating institutions (80%), have said to have worked with other organizations to develop policies. In particular, the Archivio centrale dello Stato (Italy), and the National Library and the Museovirasto in Finland

have specified that, although they do not have their own internal policies, they have participated in several national and international research projects. Belgium (City Archives of Antwerp) and Australia (National Archives) have pointed out that the cooperation has provided them with an opportunity to compare expertise and experiences. The Central National Library in Florence, Italy, has explicitly pointed out its positive participation in European (NEDLIB) and international (Consortium on Web Archiving) projects, in order to subsequently develop, at the national level, guidelines for the preservation of Italian cultural heritage. As shown in Table 26, each institution cooperates in different ways with several other organizations and, significantly, not only with organizations within its sector. For example, archival institutions do not only cooperate with other archives but also—as shown by the high percentages—with libraries museums and, most of all, with the wider public sector in its different areas of activity. For example, the Finnish National Archives collaborated with the Ministry of Culture and the Finances Ministry, while France and Greece engaged in collaborations with statistics institutes. Significant cooperation also takes place with scientific research institutions, universities, and organizations involved with standards and technical regulations, such as the ATICA (Agence pour les technologies de l'information et de la communication dans l'administration) in France, and the Autorità per l'informatica (Informatics Authority), now Centro nazionale per l'innovazione nella pubblica amministrazione (National Center for Innovation in Public Administration), in Italy. There also exist collaborations with the private sector—which has been repeatedly mentioned in the responses—especially with publishers and software and hardware producers. The San Diego Supercomputer Center in the United States has specified that its cooperation with archives and libraries mostly aims at making available to such institutions its technology and the solutions identified through research projects. The study shows that cooperation mostly occurs at the national and international level and that the workload is shared among institutions also according to the specific research projects undertaken. For example, this has happened for the many European libraries that participated in the European NEDLIB project, and for the Dutch National Library's participation in the IBM promoted "e-Depot," aimed at developing IBM's digital repository.

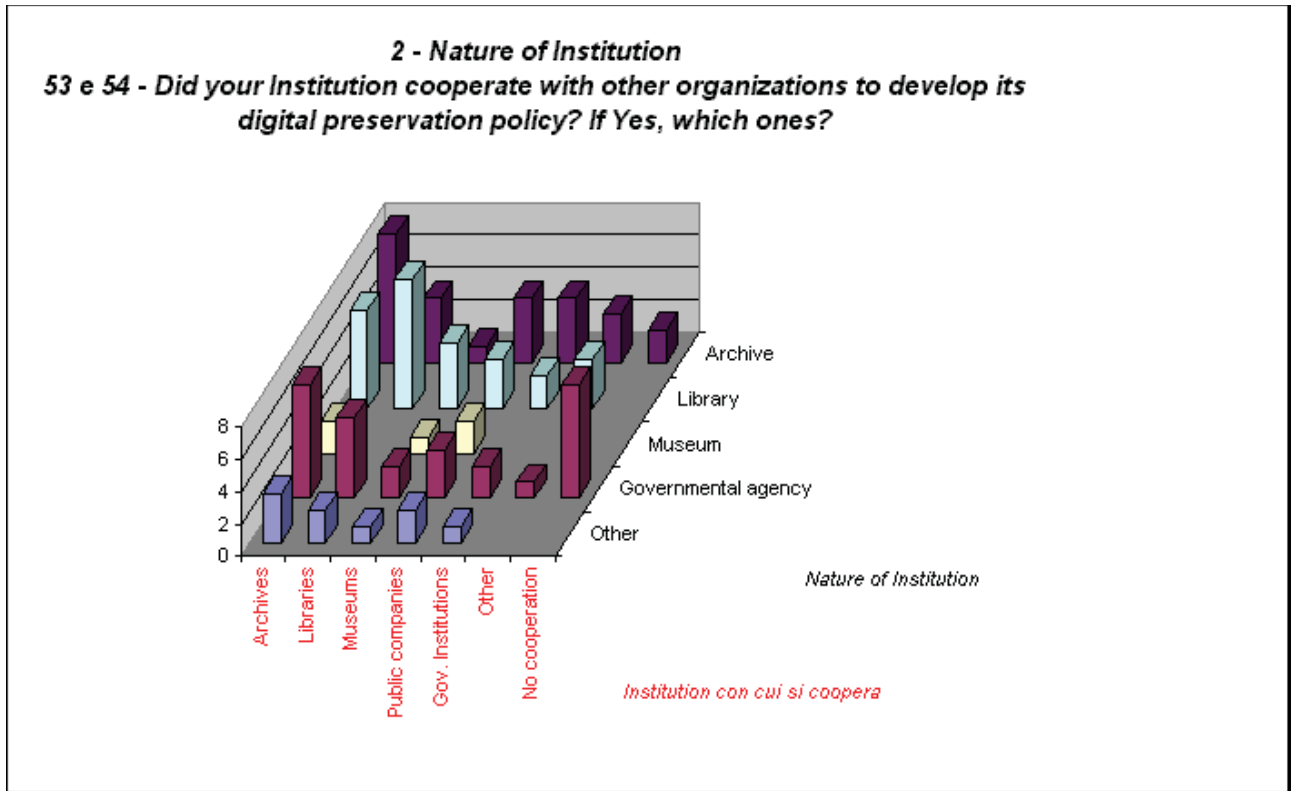


Table 26—Cooperation for Policy Development

Section 6. Costs

The costs of digital materials preservation activities and of their specific supporting tools (in this case, policies and guidelines) are a critical issue that has made the communities involved embark on a long quest for an answer, which so far has not provided any sufficiently detailed results, also due to the fact that up to now there are very few experiences to compare. The drafting and subsequent revision of a digital preservation policy require the institution to seek and make available sufficient resources, both financial and human, to be employed in various activities, although such resources are not usually applied exclusively to this task. In fact, the study results show (Table 27) that only in 13% of the institutions costs for policy development are a significant entry in the budget, while in most cases (34%) the funds allocated are more limited. The Public Record Office of Victoria (Australia) and the National Archives and Records Administration (United States) pointed out, in particular, that the most significant cost component applies to the implementation and initial development of a policy system, while they consider less relevant (although different) all the subsequent activities of revision and monitoring.

Specifically in regard to the costs of policy monitoring and updating, as shown in Table 27, the data have shed light on a decreasing value scale in which the lowest cost factor corresponds to the highest percentage of institutions participating in this study (33%).

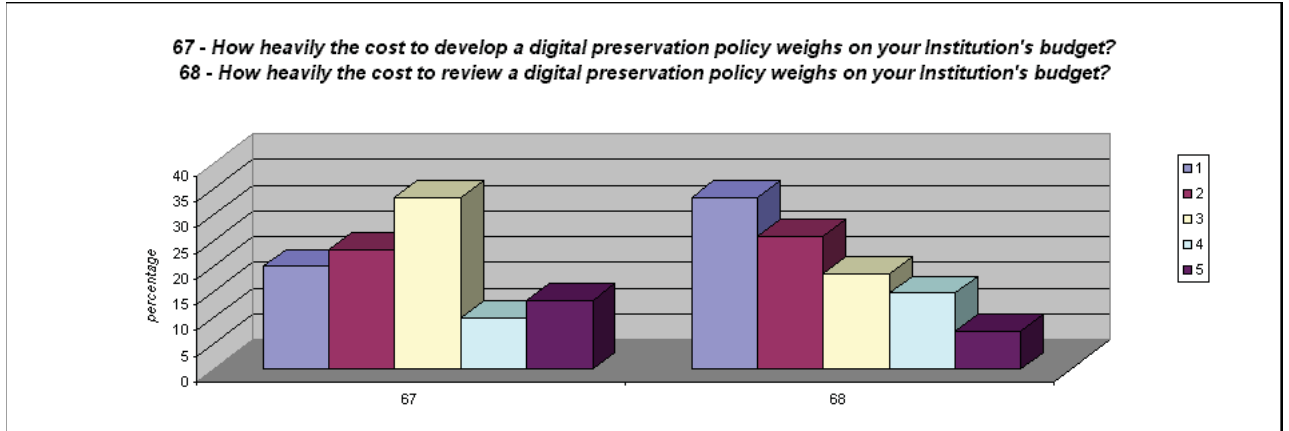


Table 27—Costs of Policy Development and Update

Another theme is funding availability in the participating institutions that are engaged in identifying the materials specifically intended for digital preservation. The data show that in most cases (53%) it is difficult for the institutions to find internal available resources, although they consider identifying materials for digital preservation an essential part of their preservation function. The data analysis also reveals that only half of the participating institutions have internal availability of specific resources for the preservation of their digital materials (47%). Some institutions (for example the City Archives of Antwerp and the Dutch National Library) have pointed out that funding from the European Union is limited and that, in general, all funds provided from the outside, both at the international level and on the part of the private sector, are also limited. One of the outcomes of this lack of resources is the almost complete impossibility to hire external consultants. Another outcome, that is, the common decision not to outsource services (outsourcing tends to be very costly) might arise not from budget constraints, but from the need—in organizations largely dedicated to heritage preservation and aware of the cultural value of digital materials—to directly manage a fundamental function, which is rightly considered “core business” within the institutional mission. It may be noted here that, currently, relevant and widespread experiences of outsourcing in the digital preservation field do not seem to exist (Table 28).

39 - If Yes (33), does this policy provide that your Institution takes care of its digital preservation activities itself or are these outsourced?

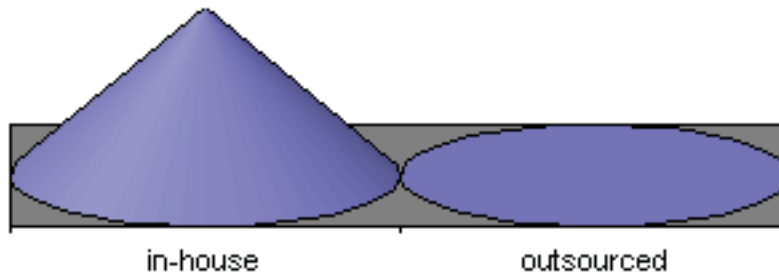


Table 28—Outsourcing

Answering to the question asking what services would the institutions use if available at a lower cost, institutions have generally presented some options (although varied according to the institutional functions), while the National Archives of Australia have explicitly denied that they would use any of these services. In particular, as shown in Table 29, training (78%) and definition of standards and best practices (78%) are the services that the institutions currently seem more favorable to seek outside, contrary to the services identified, for example, as “consultant services” (47%).

71 - Which of the following digital archiving services might your Institution use if they were available at a reasonable cost?

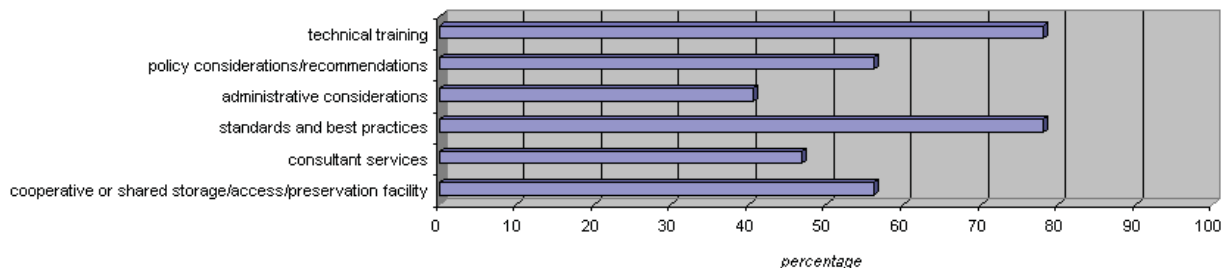


Table 29—Services that Might be Outsourced if Available at Limited Costs

Section 7. Monitoring and Revision

The monitoring and revision activities that a digital preservation policy should periodically undergo, mostly aim to reach higher and higher levels of efficiency and effectiveness and also have the goal to evaluate to what degree the principles expressed in the policy itself meet the current needs of the institution, which should always be ready to adapt itself to the constant change that affects the organizational structure and workflow activities, as well as the technology and media sector.

How often each institution decides to update and revise its policy depends on several factors, such as the type of organization, the speed of the technological changes—as the Dutch National Library appropriately pointed out, the level of activities, both the current one and the required one—according to the response of the National Archives and Records Administration (United States), and also the speed of standards change—as specified by the San Diego Supercomputer Center (United States).

The data analysis shows a contradictory situation in relation to revision times, when comparing general recommendations to the actual operational choices made by the institutions that have a policy in place. At the general level, all institutions think that policies should be revised on an annual basis, except for the Australian National Archives and the Finnish National Library, which expressly supported a different choice, believing that a well designed policy should not require ongoing updates. In contradiction with what stated at the general level, the specific analysis of institutions' behaviors reveals that in 33% of cases policies are updated "rarely," while annual updating occurs in 17% of cases and "frequent" updating occurs for a 50% (see Table 30).

In regard to actual operational models, it is interesting to point out that while the Australian institutions (Public Record Office of Victoria, National Archives) require a non-continuing revision activity, American institutions (San Diego Supercomputer Center and National Archives and Records Administration) require a high frequency of updates.

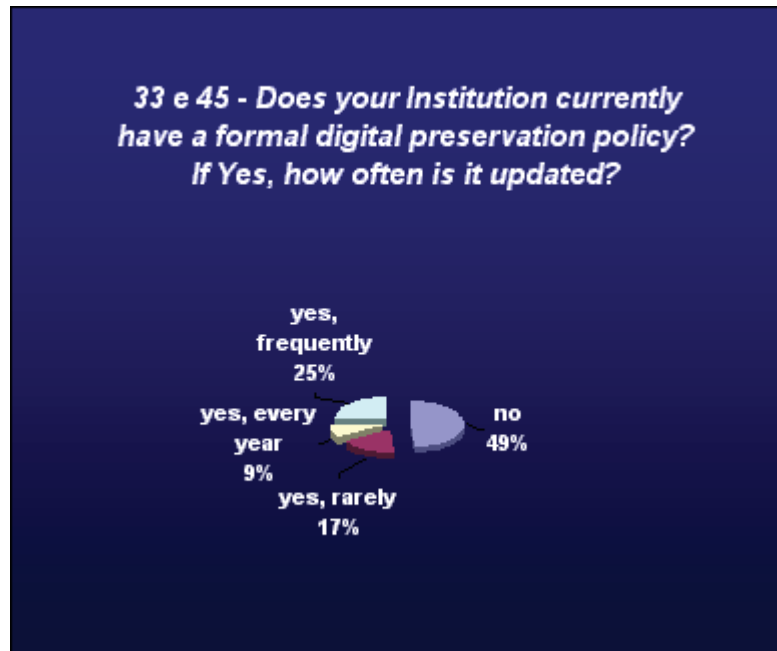


Table 30—Frequency of Digital Preservation Policy Updates

Furthermore, the study results have indicated that currently digital preservation policies are basically able to meet the real needs of an institution only for a period of time between 2 and 5 years. This limited time frame appears to be highly determined—as the specific comments also point out—by technological constraints, which seem to heavily influence internal institutional policies and guidelines. Financial constraints, as well as the organizational structure and level of knowledge and experience also play an important role. The San Diego Supercomputer Center in the United States has pointed out that the next generation of technologies based on dynamic consistency constraint management systems is currently in phase of development. These new technologies will allow the automatic implementation of some policy functions that require upgrading.

Measures and activities on which institutions base their policy revision and improvement interventions mostly concern development plan analysis, auditing and preservation function monitoring activities, with a particular focus—as specified by the Canadian National Archives and National Library—on the state of technologies and on the amounts and types of records that need to be preserved (see Table 31). Other measures that may be listed—on the basis of the information provided, respectively, by the San Diego Supercomputer Center, the National Archives in Washington, D.C., and the Dutch National Library—are a recurring function of independent evaluation, the study of the new technological solutions available, and continuing updates on international research developments.

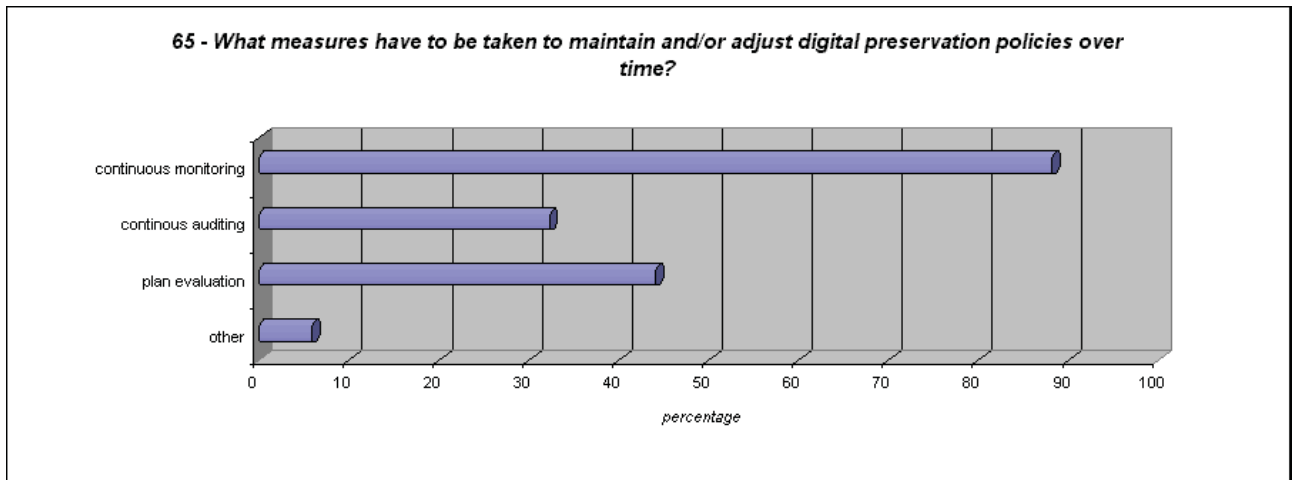


Table 31—Measures to Maintain and/or Improve Digital Preservation Policies

In order to correctly implement a policy, in a way adequate to the specific context to which it applies, and in order to make it operational each institution should conduct preparatory focused investigations and then, which is even more important, design a plan for monitoring activities to be carried out at regular time intervals. When required, the institution should also make the necessary changes to its organizational structure and should update the staff’s level of knowledge of digital preservation.

Section 8. Policy Implementation and Impact on the Organization

In order to correctly implement a policy, in a way adequate to the specific context to which it applies, and in order to make it operational each institution should conduct preparatory focused investigations and then, which is even more important, design a plan for monitoring activities to be carried out at regular time intervals. When required, the institution should also make the necessary changes to its organizational structure and should update the staff’s level of knowledge of digital preservation.

As shown in Table 32, in most of the cases examined, the higher number of changes takes place in the training sector, to acquire specific technical knowledge (83%). Other changes take place at the level of regulations and procedures (60%), followed by changes at the organizational structure definition level (57%) and staff level (51%). A good percentage (29%) shows other possible areas for change: technology (Portuguese National Library and Dutch National Library), definition of early planning of the documentary and information system (Australian National Archives and Public Record Office of Victoria), records creators participation (Riksarkivet), and financial aspects (Schweizerisches Bundesarchiv).

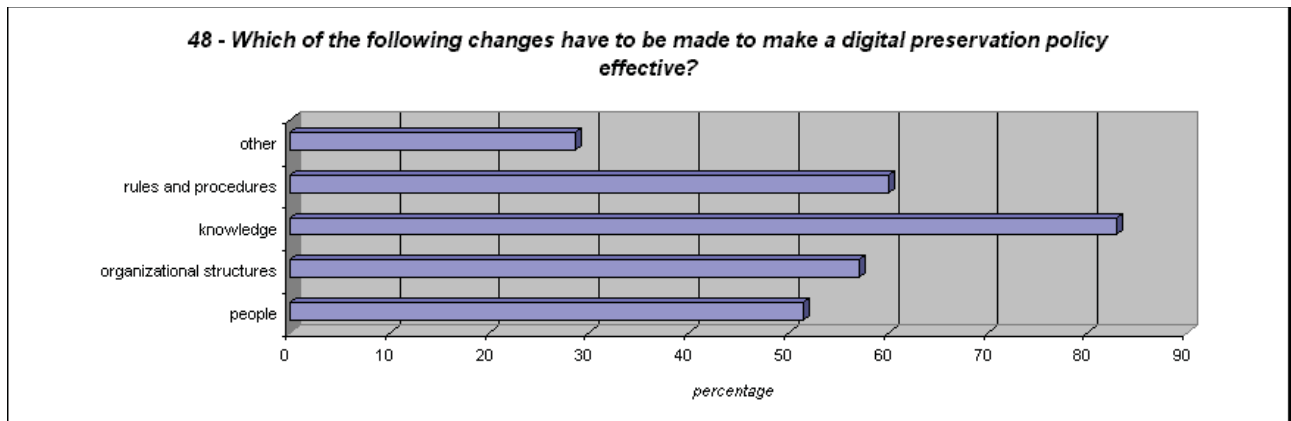


Table 32—Changes to Implement in Order to Design Effective Policies

Among the most interesting observations emerging from the data analysis, particularly relevant is the information that many institutions provided about the pre-requisites and activities necessary to successfully implement a digital preservation policy in relation to its specific context. Listed below are the most relevant suggestions on which conditions increase the effectiveness of digital materials preservation policies:

- National Library (The Netherlands): knowledge of potentials and technical requirements, international standardizing activities, use of tried procedures;
- National Library (Australia): sufficient resources, institutional internal knowledge, expert staff;
- National Archives (Ireland): coherent regulations;
- National Archives (Sweden): national standards;
- National Library (Latvia): availability of information on best practices, standards and experiences of other countries;
- City Archives of Antwerp (Belgium): adequate media management, technical-scientific knowledge, users awareness, training;
- National Archives (Finland): human resources and funding sufficient to meet the organization’s mission;
- Book and Library Portuguese Institute: widespread awareness of policies and adopted strategies, in relation both to the goals and to the need for human and financial resources;
- Portuguese Museum Institute: specific national regulations;
- National Library (Finland): adequate resources and cooperation with other sectors, such as publishing, research community and Information Technology community;
- Museovirasto (Finland): well-defined processes and detailed policies, plan for professional continuing education, a clear vision of one’s own mission and strong support for change;

- Central State Archives (Italy): correct management of the entire documentary system, with an emphasis on the design of an adequate preservation plan, properly authorized and periodically updated, analysis of the typologies of the electronic archival records present in the system and of the elements that guarantee their authenticity across time and space;
- Ulm Municipal Archives (Germany): design of policies based on administrative activities analysis, collocated at the intersection of an overall electronic records strategy and based on the current technological situation, definition of specific responsibilities (for example, for digital preservation and its related functions), policy diffusion, guidelines for policy application, preparation of specific training courses, monitoring and audit-trail supporting policy implementation, continuing revisions of the policy and of the strategy adopted for electronic records management based on the current technological development;
- Federal Archives (Germany): openness to all possible formats;
- Schweizerisches Bundesarchiv: expert personnel and sufficient resources;
- National Archives and National Library (Canada): support from expert personnel that has practical more than theoretical knowledge, advocacy and defense of institutional mission, increasing awareness, partnership development;
- Public Record Office of Victoria (Australia): strategic vision, adoption and publication of open standards, support to users and providers for standards adoption, continuing updating of adopted standards, also through research activities that may secure practical and efficient methods for digital materials acquisition, management and use, adoption of software that fits in with the adopted standards;
- “Marciana” National Library (Italy): financial resources, expert personnel availability, continuing training, guidelines and technical standards;
- Centre des Archives (France): strong support from top management and government authority, professional training for the personnel, strategic vision and work plan;
- National Library (Portugal): diffusion, at a social level, of adequate awareness of the issue and of how to manage it with skill and promptness, strong political and institutional support, adequate levels of technical know-how and strategic knowledge, actual investment of energy at the local level, in the organizations and institutions involved in practically solving the problem;
- University of Patras (Greece): existence of a national agreement and of an official awareness (at the government, ministry, level) that may prevent unfocused and uncoordinated activities;
- Portuguese Archeology Institute: regulations, procedures and organizational structures;
- Portuguese Center of Photography: adequate hardware and software equipment, training and financial resources;
- National Library (Spain): staff, professional training and equipment;

- Aristotle University of Thessaloniki (Greece): resources, organization's decision-making ability, knowledge of preservation standards;
- National Archives (Australia): planning, adequate resources and technical skills;
- National Library (Germany): clear vision of the task and of the central role played by collaborative initiatives;
- National Archives and Records Administration (United States): organizational commitment, clear definition of requirements, multidisciplinary skills, financial resources, availability of adequate technology, capability of adapting to constantly evolving technologies.

From this information it comes out that the highest requirements for internal policy guidelines development and implementation are: human and financial resources assigned to digital preservation and training courses to increase the knowledge and experience level of the preservation personnel. In relation to the preliminary activities that should be carried out in order to make policy adoption efficient, the investigation's outcomes show that, in almost every institution, these activities are:

1. study the typology of the materials that need to be preserved;
2. create a safe place for the materials;
3. make decisions about the most appropriate preservation strategies;
4. secure access to the preserved materials;
5. gather sufficient human and financial resources;
6. develop guidelines and pilot projects and activities programs tackling key policy elements;
7. study and monitor existing standards.

From the data collected, it currently emerges that 78% of the participating institutions apply their policies to all their sectors.

COUNCIL RESOLUTION**of 25 June 2002****on preserving tomorrow's memory — preserving digital content for future generations**

(2002/C 162/02)

THE COUNCIL OF THE EUROPEAN UNION,

RECALLING the strategy set by the European Council on 23 and 24 March 2000 in Lisbon aiming at preparing the transition of the European Union 'to a knowledge-based economy and society by better policies for the information society and R & D'; as well as the 'Europe 2002' action plan, presented to the European Council held in Santa Maria da Feira on 19 and 20 June 2000, that called for increased digitisation and use of the Internet, e.g. in e-commerce, in public service, in health services and in cultural institutions,

RECOGNISING that European society and the economy as a whole are increasingly dependent on digital information and that the archiving of this information will be essential in the future in providing a comprehensive view of European development and collections,

NOTING that the cultural and intellectual assets of our society, which are created, usable and available in digital form and which form the memory of tomorrow are dependent on rapidly changing technologies, on fragile media and are widely distributed geographically and that these assets are, therefore, at great risk of being irremediably lost unless positive measures are taken to preserve them and to keep them available for the future,

FURTHER NOTING that memory institutions such as archives, libraries and museums have a central role to play in these actions,

ALSO NOTING that the digital preservation extends the existing vast publicly held collections and that a significant quantity of digital content is also in the possession of various private actors (such as publishers and broadcasters etc.), which should be taken into account when analysing the situation and planning long-term preservation measures,

NOTING that Decision No 182/1999/EC of the European Parliament and of the Council of 22 December 1998 concerning the fifth framework programme of the European Community for research, technological development and demonstration activities (1998-2002)⁽¹⁾ includes actions 'to enable linguistic and cultural diversity' and scientific and technological objectives such as 'accessing scientific, cultural and

other items through the networking of libraries, archives and museums'; FURTHER NOTING that research into new information society technologies providing improved access to and preservation of cultural and scientific resources will remain essential for the foreseeable future,

NOTING that the Council Resolution of 26 June 2000 on the conservation and enhancement of European cinema heritage⁽²⁾ emphasised that through the cinema heritage the citizens, in particular future generations, will 'have access to one of the most significant forms of artistic expression of the last 100 years and a unique record of the life, customs, history and geography of Europe' and that the Resolution recalled, among other things, the interdisciplinary nature of the problems involved, the absence of specialist vocational training and the transnational nature of the response demanded,

RECALLING that the Council Resolution of 21 January 2002 on culture and the knowledge society⁽³⁾ called on the Commission and the Member States to, *inter alia* 'to assist in the digitisation of cultural content and in the interoperability of the related systems with a view to preserving, protecting and raising awareness of the European cultural heritage and European cultural diversity',

NOTING the vast changes in methods of creating, storing and preserving records, documents and archives, in particular in digital form; and STRESSING the need to continue to develop methods and guidelines for long-term preservation of these records, documents, collections and archives essential for safeguarding the heritage of Europe,

CONVINCED that it is therefore essential to target practical actions, shared by all of the Member States, that will address the high fragmentation of approaches across different cultural sectors and taking into consideration not only the technological challenges but also the broader socioeconomic implications,

NOTING the need for long-term digital preservation work which takes account of what has already been undertaken or is under way in different international networks and organisations, in particular the Council of Europe,

(¹) OJ L 26, 1.2.1999, p. 1.

(²) OJ C 193, 11.7.2000, p. 1.

(³) OJ C 32, 5.2.2002, p. 1.

PROPOSES the following objectives and indicative measures for further analysis:

- stimulating the development of policies for preserving digital culture and heritage, as well as their accessibility, through
 - establishing cooperation frameworks and mechanisms between Member States for exchanging experiences on policies, programmes and related regulatory issues, and for developing shared approaches,
 - supporting the relevant custodial organisations (e.g. archives, libraries and museums) collectively and individually, in their responsibilities for collecting digital content and keeping it accessible over time,
 - examining the organisational infrastructures and technical standards needed to support stable and compatible networks of trusted preservation repositories,
- advancing advocacy and awareness, through networks which support the sharing of experiences and progress, the adoption of appropriate standards, and the measurement and dissemination of good practices,

- considering appropriate investment, and analysing the cost and the impact on current and future funding, as well as the potential synergy between public and private funding,
- improving the skills base, by creating mechanisms for the exchange of knowledge and skills, and for the ongoing identification of emerging skills requirements and training needs,
- stimulating research into problems and solutions, through the development of research programmes, technology trials and experimental large-scale applications,

CALLS UPON THE COMMISSION AND THE MEMBER STATES, as appropriate, and within their respective areas of competence and respecting fully the subsidiarity principle, to undertake, develop or study the feasibility of the said measures,

INVITES THE COMMISSION

- in collaboration with Member States, to assess the situation,
- to report back to the Council (in principle every two years after the adoption of this Resolution),
- to draw up an action plan, as appropriate.

COUNCIL RESOLUTION

of 25 June 2002

on a new work plan on European cooperation in the field of culture

(2002/C 162/03)

THE COUNCIL OF THE EUROPEAN UNION,

1. NOTING that, in accordance with the Treaty establishing the European Community, the Community is to contribute to the flowering of the cultures of the Member States, while respecting their national and regional diversity, to encourage cooperation between Member States and, if necessary, to support and supplement their action, while fully respecting the principle of subsidiarity as well as the Commission's right of initiative in the fields falling within Community competence;
2. NOTING that 7 February 2002 was the 10th anniversary of the Treaty of Maastricht and of the inclusion of a specific article on culture in the Treaty establishing the European Community;
3. TAKING INTO ACCOUNT the fact that the Community is facing new challenges in a very different context from the one in which the Treaty of Maastricht was signed;
4. WHEREAS this new context is notably marked by the impending enlargement of the European Union;

5. TAKING INTO ACCOUNT the increasing importance of intercultural dialogue, the mass of technological innovations in the knowledge and information society, as well as the challenges of the globalisation process;
6. TAKING DUE NOTE of the Resolution of the European Parliament of 5 September 2001 on cultural cooperation in the European Union;
7. TAKING INTO ACCOUNT the mandate of the Council Resolution of 21 January 2002 on the role of culture in the development of the European Union ⁽¹⁾;
8. NOTING the debates held on one hand at the informal meetings of Ministers for Culture in Falun (20-22 May 2001), Bruges (4-5 December 2001) and Salamanca (18 March 2002) on the implementation of Article 151 of the Treaty and on the other hand the debates held during the second Forum on Cultural Cooperation in Europe organised by the Commission on 21 and 22 November 2001 on the future of Community cultural action;

⁽¹⁾ OJ C 32, 5.2.2002, p. 2.



Information Society
Technologies

**digital
preservation
projects**

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www.erpanet.org

ERPANET – Electronic Resource Preservation and Access Network – is an activity funded by the European Commission under its IST programme (IST-2001-3.1.2). The Swiss Federal Government provides additional funding.

Further information on ERPANET and access to its other products is available at <http://www.erpanet.org>.

A great deal of additional information on the European Union is available on the Internet. It can be accessed through the Europa server (<http://europa.eu.int>).

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digital preservation initiatives

Activate

URL <http://www.activate.ie>

The ACTIVATE EU project is testing the use of new technology to open new modes of access to cultural content. Existing content is being digitised, and a thematic network built. Virtual access is being opened to conservation sites of cultural and historical importance. The project builds templates for thematic network portals and content sites, using recent advances in Internet technologies. It is also building a virtual reality model of a historic landscape, (Scattery Island in County Clare) to provide a new way of accessing existing rich stores of cultural content concerning the landscape. Each step of the process is documented and the appropriate templates and tools provided, to produce an out-of-the-box solution for cultural providers across Europe who wish to replicate the project's work. The project results and product are being disseminated in a focussed manner to cultural providers. The ultimate aim of the project is to produce downloadable templates for creating your own thematic network. As a pilot test project a local history thematic network is being created. An Chomhairle Leabharlanna is working in partnership with Clare County Library, Cork City Library, Silverstorm Ltd. and The Digital Media Centre, Dublin Institute of Technology.

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digital preservation initiatives

ADETI

URL <http://www.adeti.es>

(in Spanish)

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digital preservation initiatives

AHDS (Arts and Humanities Data Service)

URL <http://ahds.ac.uk/digital.htm>

The Arts and Humanities Data Service is a UK national service funded by the JISC and AHRB to collect, preserve and promote the electronic resources which result from research and teaching in the arts and humanities. It encourages research and educational use of its collections and makes information about them available through online catalogues. The identification and promotion of shared standards is critical to the AHDS's work. Preserving and exchanging digital information relies upon their widespread adoption and so does a more integrated approach to resource discovery which may help our users to find the resources they require irrespective of where they are located or how they are stored. The AHDS is composed by 5 subject teams: Archaeology Data Service, Visual Arts Data Service, Oxford Text Archive, Performing Arts Data Service, History Data Service that deal with different kinds of digital data.

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digital preservation initiatives

ARCHISIG (Conclusive and Secure long-term archiving of digitally)

URL <http://www.archisig.de>

In the 'ArchiSig' project, archiving concepts and technologies are taken up and extended in a way that will allow secure and conclusive long-term archiving of digitally generated and signed data for 30 years or more. This involves the development of system architectures with new technical components and organizational concepts to guarantee the security of digital signatures. The solutions have to be practical, cost effective and in accordance to legislation in order to allow their deployment in various areas of the society.

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digital preservation initiatives

Archives de France

URL <http://www.archivesdefrance.culture.gouv.fr/>

The Archives of France is developing guidelines for electronic archives. The Archives of France control the National Archives and the regional, departmental, and municipal archive agencies, as well as the archive agencies of organizations that are authorized, by way of derogation, to manage their permanent archives. The Archives of France is exploring the possibility of cooperating with BnF on archiving government Web sites. Such collaboration would have significant technical benefits, because French archives are decentralized and central IT support is limited. It is anticipated that the Archives will want to process Web sites differently than the BnF does, given archival interests in the hierarchy and administrative context of the documents. ,

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digital preservation initiatives

Archives Hub(gateway to archives at universities and colleges in UK)

URL **<http://www.archiveshub.ac.uk>**

The Archives Hub provides a single point of access to descriptions of archives held in UK universities and colleges. At present these are primarily at collection-level, although where possible they are linked to complete catalogue descriptions. The Archives Hub forms one part of the UK's National Archives Network, alongside related networking projects. A Steering Committee which includes representatives of the Public Record Office, the Historical Manuscripts Commission and the other archive networks guides the progress of the project. There is also a Contributors' and Users' Forum which provides feedback to aid the development of the service

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digital preservation initiatives

ARELDA Project of the Swiss Federal Archives

URL <http://www.bundesarchiv.ch/>

The Swiss Federal Archives is responsible for the safe-keeping of their records. Concepts and techniques are developed and realized to preserve the documents which are a part of Switzerland's cultural assets. The preservation of records comprises 3 phases: preventative conservation of all documents, bulk conservation of individual fonds and restoration of endangered or damaged documents. The Swiss Federal Archives' aim is to prevent damage through use backup copies (microfilm, digital copies) of records are made. Acidic paper is treated in bulk within the framework of Papersave Swiss. The preservation of new forms of media presents the archives with a great challenge. The Swiss Federal Archives participates in the archiving of audio-visual media with an in-house group of specialists FAGAM and as a member of Memoriav. The Swiss Federal Archives has been recording digital data since 1982. The special department ARELDA is entrusted with such recordkeeping and supports or advises the records management team of the Federal Archives as well as the departments of the Federal Administration. In addition, this special department strives for long-term solutions for permanent archiving within the framework of the e-government-project ARELDA.

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digital preservation initiatives

Ariadne

URL <http://www.ariadne.ac.uk>

Ariadne is a magazine targeted principally at information science professionals in academia, and also to interested lay people both in and beyond the Higher Education community. Its main geographic focus is the UK, but it is widely read in the US and worldwide. The magazine has as its principal goal: to report on information service developments and information networking issues worldwide, keeping up with the current digital library initiatives. It has reported in depth to the information community at large on progress and developments within the UK Electronic Libraries Programme since its inception, and now additionally reports on newer JISC-funded programmes and services, including the DNER, the JISC Information Environment, and the RDN.

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digital preservation initiatives

ARNO

URL <http://www.uba.uva.nl/projecten/object.cfm?objectid=1A103F4F>

The ARNO project (Academic Research in the Netherlands Online) aims to develop and implement university document servers to make available the scientific output of participating institutions. The ARNO project is funded by IWI (Innovation in Scientific Information Supply). Project participants are the Universiteit van Amsterdam, Tilburg University and the University of Twente. The project continues to build on earlier IWI projects in the area of electronic publishing and on international initiatives such as "The Open Archives Initiative".

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digital preservation initiatives

ARTISTE

URL <http://www.it-innovation.soton.ac.uk/artiste/>

ARTISTE (<http://www.artisteweb.org/>) is a European Commission supported project that has developed integrated content and metadata-based image retrieval across several major art galleries in Europe. Collaborating galleries include the Louvre in Paris, the Victoria and Albert Museum in London, the Uffizi Gallery in Florence and the National Gallery in London.

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[digital preservation initiatives](#)

Audata (Consultancy in Information Management)

URL <http://www.audata.co.uk>

Audata Ltd. is a unique consultancy working at strategic and practical levels to provide Information Management solutions, ranging from professional Records Management through development of policies and procedures, to EDMS, biometric solutions and digital preservation. Audata Ltd. was founded in April 1998.

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digital preservation initiatives

BETADE– DIOC Building blocks for Effective Telematics Application Development and Evaluation

URL <http://www.betade.tudelft.nl/>

BETADE is dealing with the modelling, analysis, design, implementation, and operation of different aspects of distributed processes that can be done using the same set of components or building blocks. The main idea is to first model the processes using a consistent (simulation) library of building blocks, and then use a completely similar structured set of building blocks for implementing the organizational structure, ICT support, and document flows. Taking into account these different aspects of complex systems design gives the BETADE program a broad research focus. Researchers pay for instance attention to: information exchange and document standards using e.g. XML, libraries of components and building blocks for modelling and simulation, applications in document management and longevity of documents and metamodels for component based design and repositories to store and maintain models. The project is based in the Faculty of Technology, Policy and Management, which is part of the Delft University of Technology.

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digital preservation initiatives

Bibliothèque Nationale

URL <http://www.bnf.fr>

The Bibliothèque nationale de France (BnF) is funded through the French Ministry of Culture and has a staff of 2,800. It has an annual budget of 1 billion French francs for operating costs. This sum excludes salaries, which are controlled by and paid for separately by the Ministry of Education (the librarians) or the Ministry of Culture (other staff). Six hundred staff members are on short-term contracts funded from the operating costs. The library does not lend materials or supply documents. It is solely a library of last resort with on-site access to any material in copyright that has been deposited. Digitisation of collections started in 1992 and includes materials in the national library and in associated library collections. There has been a strong focus on digitizing public-domain print collections, and they are made available through the Gallica Web site. The digitized collection consists of homogenous documented formats and has already been migrated once. A large program for digitizing video as well as digital preservation has just started.

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digital preservation initiatives

BND - Biblioteca Nacional Digital

URL <http://bnd.bn.pt>

BND is a project of the National Library of Portugal covering the deposit of digital publications, digitisation, digital publishing, digital preservation and the development of technology for all the related areas.

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digital preservation initiatives

Budapest Open Access Initiative

URL <http://www.osi.hu>

The Budapest Open Access Initiative arises from a small but lively meeting convened in Budapest by the Open Society Institute (OSI) on December 1-2, 2001. The purpose of the meeting was to accelerate progress in the international effort to make research articles in all academic fields freely available on the internet. The participants represented many points of view, many academic disciplines, and many nations, and had experience with many of the ongoing initiatives that make up the open access movement. In Budapest they explored how the separate initiatives could work together to achieve broader, deeper, and faster success. They explored the most effective and affordable strategies for serving the interests of research, researchers, and the institutions and societies that support research. Finally, they explored how OSI and other foundations could use their resources most productively to aid the transition to open access and to make open-access publishing economically self-sustaining. The result is the Budapest Open Access Initiative. It is at once a statement of principle, a statement of strategy, and a statement of commitment.

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[digital preservation initiatives](#)

Camileon (Creative Archiving at Michigan and Leeds: Emulating the Old on the New)

URL <http://www.si.umich.edu/CAMILEON/>

The CAMiLEON Project is developing and evaluating a range of technical strategies for the long term preservation of digital materials. User evaluation studies and a preservation cost analysis are providing answers as to when and where these strategies will be used. The project is a joint undertaking between the Universities of Michigan (USA) and Leeds (UK) and is funded by JISC and NSF. CAMiLEON stands for Creative Archiving at Michigan & Leeds: Emulating the Old on the New. Emulation has been proposed as a digital preservation strategy that would enable obsolete systems to be run on future unknown systems, making it possible to retrieve, display and use digital documents with their original software. An apparent advantage of this approach is its potential to capture the 'look and feel' of digital objects as well as their intellectual content. Emulation as a preservation strategy raises many issues that the project will evaluate

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digital preservation initiatives

Cedars (CURL Exemplars in Digital Archives)

URL <http://www.leeds.ac.uk/cedars>

The Cedars project began in April 1998 and was initially funded for three years. It began as a collaboration between three CURL institutions, the universities of Leeds, Cambridge and Oxford. The increasing investment in and dependence on digital resources makes it crucially important that greater attention is given to how those resources are going to remain accessible beyond the very short term if there are not to be severe consequences for scholarly research. The original project proposal stated that the main objective of the project was 'to address strategic, methodological and practical issues and provide guidance in best practice for digital preservation. The Preservation 2000 Conference was hosted by Cedars to highlight international progress in digital preservation and was originally intended to mark the end of the project. A second project proposal for additional JISC funding for an additional year was successful. The extension year, to run from April 2001 to March 2001, sought to focus primarily to consolidate and disseminate the work of the previous three years.

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digital preservation initiatives

CILIP (Chartered Institute of Libraries and Information Professionals)

URL <http://www.cilip.org.uk>

CILIP is the Chartered Institute of Library and Information Professionals, a new professional body formed following the unification of the Institute of Information Scientists (IIS) and The Library Association (LA). CILIP's Mission is to: , • set, maintain, monitor and promote standards of excellence in the creation, management, exploitation and sharing of information and knowledge resources; , • support the principle of equality of access to information, ideas and works of the imagination which it affirms is fundamental to a thriving economy, democracy, culture and civilisation; , • enable its Members to achieve and maintain the highest professional standards in all aspects of delivering an information service, both for the professional and the public good. CILIP'S new project is to identify copyright and licensing issues that currently hinder digital preservation and looks at whether new legislation will help.

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digital preservation initiatives

CNES

URL **http://www.cnes.fr**

The Ministry of Culture has funded coordinated research on technology, including research on producing archival-quality CDs. The Centre National d'Etudes Spatiales (CNES) has led the development of the OAIS reference model standard in France and has coordinated development of an informal group, Pérennisation des Informations Numériques (PIN), that is working on this and other standards and guidelines. ,

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digital preservation initiatives

CORDIS, the European Commission's Research and Development Information Service

URL <http://www.cordis.lu>

CORDIS, the European Commission's Research and Development Information Service, is providing a new Guidance interface to help explain the wide range of information available on its key services. One of the projects that deal with Digital Preservation is the Computerised Bibliographic Record Actions Plus Preservation and Service Developments for Electronic Publications. This is a concerted action, involving national libraries in Europe. Its main goals are to build on a concertation activity (CoBRA) set up in 1993 to promote initiatives and actions in the area of national bibliographic services at a European level. CoBRA+ consolidates previous work while widening its focus beyond national bibliographic services to include collection based issues particularly those concerned with electronic publications and related service developments in national libraries. Particular emphasis is placed on resource access and sharing, user needs and the use of communications networks to achieve these aims.

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digital preservation initiatives

COUPERIN

URL <http://buweb.univ-angers.fr/COUPERIN.html>

The Consortium Universitaire des Périodiques Numériques (COUPERIN), the main purchasing consortium for university libraries, is concerned about the archiving of and future access to the journals to which it subscribes. COUPERIN is reluctant to rely solely on publishers for these long-term arrangements. It has begun discussing with the BnF arrangements under which BnF would archive electronic journals that fall outside of legal deposit. BnF would wish to seek payment for this; however, because the costs of digital preservation are uncertain, BnF cannot now make contractual commitments to third parties

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digital preservation initiatives

Cultivate

URL <http://www.cultivate.org>

CULTIVATE is a pan European network for the Digital Cultural Heritage community including IT staff, information professionals, researchers, managers, policy makers, libraries, museums, archives, galleries, non-profit making organisations, etc.. CULTIVATE is the answer to the need for a newly structured network supporting the co-operation of all memory institutions (e.g. archives, libraries and museums) under the European Commission's Information Society Technologies (IST) Programme. Most partners are national nodes for Cultural Heritage Applications in their countries and co-ordinates activities in their national network. They are also active in the co-operation at European level. Some of the national nodes have also undertaken tasks of European dimension.

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digital preservation initiatives

CURL (Consortium of University Research Libraries)

URL <http://www.curl.ac.uk>

CURL was formed in 1983 to bring together the larger research-based university libraries in the UK and Ireland, to share resources and to foster collaboration for the mutual benefit of the CURL libraries and the users of their collections. During the 1990s CURL's membership expanded, and by the beginning of 2000 there were twenty-one university libraries in full membership of the consortium. The shared interests of university research libraries with the national libraries and other institutions with major research collections, is recognised by including these libraries as associate members of CURL. It's mission is to promote, maintain and improve library resources for research, learning and teaching in research-led universities, as well as develop co-operative and consortial solutions to the challenges faced by members, in the acquisition, processing, storage, preservation, exploitation, dissemination and delivery of information and library materials, for the benefit of their institutions.

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digital preservation initiatives

CYCLADES

URL <http://www.cyclades.org>

CYCLADES is developing an open collaborative virtual archive service environment supporting both single scholars as well as scholarly communities in carrying out their work. In particular, it will provide functionality to access large, heterogeneous, multidisciplinary archives distributed over the Web and to support remote collaboration among the members of communities of interest. CYCLADES will run on the data environment composed by the archives that adhere to the Open Archives Initiatives harvesting protocol specifications (<http://www.openarchives.org>). From the technical point of view, CYCLADES will consist of the following federation of independent but interoperable services characterised by the following key features: Access (harvest-based information gathering, plus indexing and storage of gathered information in a local database) and Digital Preservation.

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digital preservation initiatives

DAVID

URL <http://www.dma.be/david>

The processing of information is more and more a matter of computers and electronic files. The question how these electronic files can be archived in a secure and lasting way, is keeping the world of archives busy since many years. Everyone can see that digital archiving offers many advantages, also if traditional paper documents are concerned. Digital archives are more accessible and they take up less room. Digital archiving is however rather new and full of uncertainties. How can one guarantee the integrity of electronic archives? An electronic file can be changed rather easily. And how can one assure that an electronic file stays legible in the long term, considering the fast evolution in hardware and software? There are no standards yet and there are still many questions about the "digital durability" of electronic archival material. DAVID's aim is to ensure the long-term preservation of the electronic records.

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digital preservation initiatives

DELOS

URL <http://delos-noe.iei.pi.cnr.it>

The Network activities of DELOS are organized into five Forums, each consisting of a set of actions. This organization has been chosen to stress an important feature of DELOS, i.e. its openness to the Digital Library research world and the relevant user communities (libraries, archives, museums, electronic publishing, broadcasting, etc.). DELOS' mission is:

- To accelerate and enhance research into digital libraries; to provide appropriate testbeds for evaluating research in the digital library domain.
- To follow, participate in and contribute to on-going activities on relevant standards by creating appropriate working groups with the task of examining a specific cluster of relevant standards; to effect the transfer of research results into implementation while providing researchers with feedback on practical problems of deployment; to disseminate the results of working group activities in the form of white papers, workshop proceedings and reports.

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digital preservation initiatives

DIAMM (Digital Image Archive of Medieval Music)

URL <http://www.diamm.ac.uk>

The purpose of the Digital Image Archive of Medieval Music (DIAMM) is to obtain, archive and, where necessary, enhance digital images of European sources of medieval polyphonic music. These include a relatively small number of complete manuscripts, found throughout Britain and continental Europe which have been widely studied since their discovery by scholars at various times over the past century. They also include the much more numerous manuscript fragments, often barely legible and hard to place and interpret, which amount to a rich but widely scattered resource that has been relatively neglected, partly because of the difficulty of access, legibility and comparison of widely scattered materials that are at the same time vulnerable to damage and loss. The project has created a new permanent electronic archive of these images, both to facilitate detailed study of this music and its sources, and to assure their permanent preservation.

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[digital preservation initiatives](#)

DigiBib HBZ – Digitale Bibliothek Hochschulzentrum Nordrhein-Westfalen,

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(In German)

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digital preservation initiatives

Digicult

URL <http://www.digicult.info>

DigiCULT draws on the results of the strategic study "Technological Landscapes for Tomorrow's Cultural Economy - DigiCULT", that was initiated by the European Commission, DG Information Society (Unit D2: Cultural Heritage Applications) in 2000 and completed in 2001.

*European
Commission*

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[digital preservation initiatives](#)

Digital Archive

URL <http://www.pro.gov.uk/about/preservation/digital/archive/default>

Digital Archive that stores computer records transferred from UK Government departments

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The National Archives

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email: digitalarchive@nationalarchives.gov.uk

digital preservation initiatives

Digital Information Office

URL <http://dio.cdli.strath.ac.uk/>

The Strathclyde University Digital Information Office provides advice and guidelines for the management of electronic teaching, learning and research resources within the University, and services for access to Strathclyde-produced electronic resources. The Digital Information Office develops standards and guidelines on digital preservation issues.

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digital preservation initiatives

Digital Preservation project

URL <http://www.lib.ed.ac.uk/speccoll/>

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.

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digital preservation initiatives

DLM Forum

URL <http://www.dlmforum.eu.org>

This DLM Forum covers several areas of interest, (national policies & initiatives, organisational change, exploitation, and ICT) and formulates a series of recommendations. In particular, it provides a roadmap of how cultural heritage technologies will or could develop in the near future (until 2006)

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B-1049

Belgium

*DLM-Forum Secretariat c/o European
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digital preservation initiatives

DNEP: Digital Archive Store Project

URL <http://www.kb.nl/kb/dnp/dnep-en.html>

The National Library of the Netherlands (KB) collects the published and literary heritage of the country. KB initiatives include developing the Digital Archive Store Project (DNEP), a national agreement on voluntary deposit with publishers, a long-term digital preservation study with IBM, and many digitisation projects, including the Memory of the Netherlands and Treasures of the National Library. The latter two projects focus on improving access and interoperability with other collections. In its capacity as National Library of the Netherlands the KB is responsible for the Dutch deposit library. The aim of the deposit library is to collect, catalogue and preserve all publications appearing in the Netherlands. As the number of electronic publications is on the rise, the KB has embraced the important task of preserving and providing long-term access to Dutch electronic publications. It has developed a digital information archiving system which is the technical heart of the 'e-Depot' project. It is primarily intended for archiving publications by Dutch publishers. In addition, the KB's research initiatives are geared towards ensuring long-term access.

Netherlands

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digital preservation initiatives

DNER (Distributed National Electronic Resource)

URL <http://www.jisc.ac.uk.dner>

The Distributed National Electronic Resource (DNER) is a managed environment for accessing quality assured information resources on the Internet which are available from many sources. These resources include scholarly journals, monographs, textbooks, abstracts, manuscripts, maps, music scores, still images, geospatial images and other kinds of vector and numeric data, as well as moving picture and sound collections. The DNER team no longer exists as an administrative entity, and the new JISC executive structure means that team members are distributed throughout all 4 branches of the JISC executive. The documents accessible from the list on the left are retained for historical interest.

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digital preservation initiatives

DOMEA: Dokumentenmanagement und elektronische Archivierung

URL <http://www.uni-koblenz.de/fvi/projekte/domea.html>

(In German)

Germany

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digital preservation initiatives

Domesday for Windows

URL <http://www.pro.gov.uk/about/preservation/digital/domesday/def>

The National Archives has recently unveiled a new version of the 1986 BBC Domesday Project in the archives library at Kew. Together with LongLife Data Ltd, ATSF and the BBC, the National Archives have rescued data from the famous Domesday discs and made it available through a new Windows PC interface

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The National Archives

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digital preservation initiatives

Dspace

URL <http://www.lib.cam.ac.uk/dspace/>

Cambridge University Library, in association with the University Computing Service, has formulated a major project to provide the University with an institutional digital repository, 'DSpace@Cambridge'. This repository will provide a home for the increasing amount of material that is being digitised from the University Library's own printed and manuscript collections. It also has the ability to capture, index, store, disseminate and preserve digital materials created in any part of the University. These will potentially include scholarly communications (articles and pre-prints), theses, technical reports, archives of departments and the University as a whole, and other textual material, together with different formats such as multimedia clips, interactive teaching programmes, data sets and databases.

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digital preservation initiatives

ECPA: European Commission on Preservation and Access

URL <http://www.knaw.nl/ecpa/>

The European Commission on Preservation and Access (ECPA) was established in 1994 to promote activities aimed at keeping collections in European archives and libraries accessible over time. Books, documents, photographs, films, tapes and disks are all subject to decay. The digital revolution has introduced new problems of obsolescence of soft- and hardware. In order to keep our documentary heritage available for future generations of users, large-scale programmes must be developed for its preservation. The ECPA aims to raise public awareness of this issue and to impress the urgency of the situation on policy makers, funding agents, and users. The ECPA acts as a European platform for discussion and cooperation of heritage organizations in areas of preservation and access. The publications of the Commission are widely distributed to institutions throughout Europe. To promote the exchange of knowledge and experience, the ECPA organizes conferences, meetings and workshops.

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digital preservation initiatives

Edina Digital Conservatory

URL <http://edina.ac.uk/>

The purpose of this section of the EDINA project (Digital Conservatory) is to assist staff and users in finding information about digital preservation and related issues. EDINA is a JISC funded national Data Centre. It offers the UK education and research community networked access to a library of data, information and research resources. EDINA is also undertaking a number of projects that will provide useful learning and teaching resources to the UK tertiary education community. Whilst EDINA does not hold archival responsibility for many of the resources it hosts, staff are looking into best practice for identifying the locus of archival responsibility for each resource, as well as identifying issues of preservation for digital materials.

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digital preservation initiatives

ELAK (Elektronischer Akt)

URL <http://www.cio.gv.at/elektronischerAkt/>

(In German only)

tel:
fax:
email:

digital preservation initiatives

ELEKTRA

URL <http://www.lib.helsinki.fi/Elektra/>

Elektra collects, publishes and archives the articles of the leading Finnish scientific journals in electronic form. It is a joint project between Helsinki University Library, The Federation of Finnish Learned Societies and Kopioisto. Elektra aims at enhancing both the services and the technical and contractual conditions of electronic publishing and network access of electronic publications in Finland. The Elektra material can be found via the Finnish national Arto article database. The use of the material is restricted to those institutions which have paid for it. Currently these institutions include all Finnish public libraries, all vocational high schools and most Finnish universities. At the moment the Elektra material consists of more than 8000 full-text articles (mostly in pdf format) from circa 30 scientific journals. In addition to this, there are also 57 academic dissertations. The articles can be viewed on the screen or printed out on paper.

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digital preservation initiatives

English Heritage

URL <http://www.english-heritage.org.uk>

English Heritage aims to help people understand and appreciate why the historic buildings and landscapes around them matter. From the first traces of civilisation, to the most significant buildings of the 20th century, they want every important historic site to get the care and attention it deserves. English Heritage is composed by different subject areas, one of them, the Centre for Archaeology has developed strategies for managing its digital archives. The strategy is intended to establish best practice for the preservation of, and provision of access to, the full range of digital archaeological data of long-term value for which CfA is responsible.

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digital preservation initiatives

EPICUR (Enhancement of Persistent Identifier Services - Comprehensive Method for unequivocal Resource Identification)

URL <http://www.persistent-identifier.de>

Persistent Identifiers are essential conditions for an effective management of digital resources and reliable access to electronic documents. Currently several Persistent Identifiers services have been established. But there is a general demand concerning the active introduction of Persistent Identifiers, further development of technical components of Persistent Identifier services and the establishment of an organisational infrastructure regarding Persistent Identifiers. In the framework of the project CARMEN-AP4 Die Deutsche Bibliothek implemented a Uniform Resource Name (URN) Management. The objective of the EPICUR project is to expand the existing PI-service to enable complementary application of several PI systems. At international level a URN Information Centre shall be established in co-operation with the national library of Finland

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digital preservation initiatives

EROS: Electronic Records in Office Systems

URL <http://www.pro.gov.uk/recordsmanagement/eros/overview.htm>

This is one of a series of guidance documents on the management, appraisal and preservation of electronic records in government, produced under the auspices of the Electronic Records from Office Systems (EROS) Programme of the Public Record Office. This guidance document sets out the principles of electronic records management and outlines broad strategies for translating the principles into practice. Related guidance documents will describe appropriate records and information practice and procedures in more detail, including: best practice in records management procedures for capturing, keeping and making available electronic records, the development of inventories and the process of appraisal and disposal of electronic records, strategies for permanent preservation, and the current requirements for transfer of records in electronic form to the Public Record Office.

*Public Record Office, Kew, Richmond, Surrey,
TW9 4DU
England*

tel: 020 8392 5330, extension 2670

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email: records-management@nationalarchives.gov.uk

digital preservation initiatives

E-Science Programme

URL <http://www.rcuk.ac.uk/escience/>

In November 2000 the Director General of Research Councils, Dr John Taylor, announced £98M funding for a new UK e-Science programme. The JISC and the Research Council's e-Science Core Programme are inviting bids to establish a national Digital Curation Centre (DCC) to lead research and development into key areas of digital curation for data and publications, and to pilot the development of generic support services for maintaining digital data and research results over their entire life-cycle for current and future users. The DCC is intended to provide a national focus for research into curation issues and expertise in the processes of digital archiving, preservation and management

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digital preservation initiatives

European Centre for Digital Culture, Knowledge Organisation and Learning Technology

URL <http://www.mmi.unimaas.nl>

digital preservation initiatives

The Maastricht McLuhan Institute (MMI), European Centre for Digital Culture, Knowledge Organisation and Learning Technology, was officially opened by Dr Eric McLuhan in November, 1998 and began its formal activities in January, 1999 at the Grote Gracht 82 in Maastricht. MMI is an initiative of the Universiteit Maastricht, the Hogeschool Maastricht, the Hogeschool Limburg, the Limburgs Universitair Centrum (Diepenbeek), the LIOF Industriebank N.V. and the Province of Limburg. The mission of the Research Unit on Digital Culture is twofold: , • to study the implications of ICT developments for culture and knowledge organisation. Academic research entails postgraduate students and visiting scholars. , • to create comprehensive strategies for searching, structuring, using and presenting digital resources more coherently and efficiently; to integrate past knowledge and produce ordered knowledge that leads to new understanding and insights. To achieve the latter, the research unit is developing an existing software, SUMS, in conjunction with a prototype of a Virtual Reference Room. The implications of this work for education and business are being developed by the Learning Lab and Competence Centre respectively. MMI was chosen as a first node of a European Network of Centres of Excellence in Cultural Heritage. Through this network MMI will contribute to an intellectual framework for interoperability. This work has grown out of the personal research of the director on Leonardo da Vinci and on the history of linear perspective, which was carried out in the Perspective Unit at the McLuhan Program in the University of Toronto from 1991 to 1996. The research section appointed two new members in 2000 and is intended to grow to a team of 20 within six years. The research unit has its own advisory board to guide it on matters of content.

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EVA

digital preservation initiatives

URL <http://www.lib.helsinki.fi/eva/>

EVA is a joint project by libraries, publishers and expert organizations, being part of the strategy program Education, Training and Research in the Information Society by the Finnish Ministry of Education. The central aim of the project is to create methods and tools to collect, register and archive electronic publications distributed on the Internet and to investigate conditions for long-term preservation of them in libraries. The objectives of EVA are to: • enhance criteria for selecting electronic documents, • create channels and mechanisms for acquiring electronic publications directly from publishers, • create mechanisms for collecting "grey" literature from Finnish Web-servers, • describe publications bibliographically using Finmare, Dublin Core and other metadata formats, • create an archive for collected documents and software needed to maintain this kind of archive, • enhance mechanisms to ensure the authenticity of the collected material and to structure it for search facilities, • investigate means for long-term archiving, • review the development of norms of legal deposit and copyright concerning electronic material.

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digital preservation initiatives

FEAP – Forum Européen pour les Arts et le Patrimoine

URL <http://www.eurplace.org/orga/icc/feap.html>

The European Forum for the Arts and Heritage (EFAH/FEAP) was created to develop the dialogue between the European cultural sector and the institutions of the European Union. EFAH brings together over sixty European associations, federations, networks and other organisations from the arts and heritage representing many thousands of artists, cultural administrations and heritage professionals across Europe, focusing on digital preservation. This transnational and multi-disciplinary forum offers its members a platform for dialogue and discussion on issues related to cultural policy at a European level. It allows members to develop common positions on common issues of concern and inform the European institutions with one voice.

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France*

Fazette BORDAGE

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digital preservation initiatives

GEVER net

URL http://www.admin.ch/bar/aida/w1_6.htm

(link doesn't work)

Swiss

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fax:
email:

digital preservation initiatives

HDC (Hellenic Digitisation Committee)

URL <http://www.hdpweb.org>

Hellenic digitisation Committee (HDC) is aiming at the creation of the priceless, in terms of cultural value, Hellenic digital repository. At the same time, the project aims to be a tool of coordination and cooperation among institutions and organizations that will actively participate in the creation of the digital HCC and will form the digitisation Network. Moreover, this Internet portal is an information source for every institution that is interested in issues regarding cultural content digitisation. The project's operation is being funded by the Hellenic Ministry of Culture, while its development, maintenance and constant updating are being carried out by the High Performance Computing Laboratory, at the University of Patras.

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digital preservation initiatives

ICA: International Council on Archives

URL <http://www.ica.org>

The International Council on Archives (ICA) is dedicated to the advancement of archives worldwide. Archives, by providing evidence of human activities and transactions, underlie the rights of individuals and states, and are fundamental to democracy and good governance. Archives safeguard the memory of mankind by preserving records of its past. In pursuing the advancement of archives, ICA works for the protection and enhancement of the memory of the world. • ICA is the professional organisation for the world archival community, dedicated to promoting the preservation, development, and use of the world's archival heritage. • It brings together national archive administrations, professional associations of archivists, regional and local archives and archives of other organisations as well as individual archivists. • ICA has more than 1,500 members in over 170 countries and territories, making it truly international. • It is a non-governmental organisation, which means that it maintains an independence from the political process and that its members include public and private archive institutions and individuals. • ICA works closely with inter-governmental organisations such as UNESCO and the Council of Europe. It also has strong links with other non-governmental organisations.

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digital preservation initiatives

ICOM: The International Council of Museums

URL <http://www.icom.org>

The International Council of Museums (ICOM) is an international organisation of museums and museum professionals which is committed to the conservation, continuation and communication to society of the world's natural and cultural heritage, present and future, tangible and intangible. Created in 1946, ICOM is a non-governmental organisation maintaining formal relations with UNESCO and having a consultative status with the United Nations' Economic and Social Council. ICOM helps the cultural centres and other entities that facilitate the preservation, continuation and management of tangible or intangible heritage resources (living heritage and digital creative activity).

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Miollis, Paris Cedex 15,
75732
France*

Manus Brinkman

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digital preservation initiatives

ICS-FORTH

URL <http://www.ics.forth.gr>

digital preservation initiatives

Since its establishment in 1983, the Institute of Computer Science of the Foundation for Research and Technology - Hellas (ICS-FORTH) has a relatively long history and an established tradition of internationally acknowledged excellence in conducting basic and applied research, developing innovative applications and products, and providing services in the fields of information and telecommunications technologies. ICS-FORTH is highly competitive at an international level, and many of its activities are carried out in the context of European collaborative R&D projects, which emphasize the development of Information Society Technologies and infrastructures in a number of domains of national importance and regional interest. On-going research and development (R&D) efforts focus on: information systems; data and knowledge-based systems; information retrieval, including content-based approaches; cultural informatics; digital preservation; image processing and pattern recognition; computer vision; sensor technologies; robotics; mobile and wireless (tele-)communications; network management; computer architectures; VLSI design; computer aided design; human-computer interaction; virtual reality; universal access and usability; information and communication technologies in Healthcare; and assistive technologies for people with disabilities. Current research efforts in emerging areas of interest, include bio-informatics, web systems and technologies, embedded systems, GRID and large-scale computing.

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digital preservation initiatives

ICSTI-International Council for Scientific and Technical Information

URL <http://www.icsti.org>

ICSTI, The International Council for Scientific and Technical Information, offers a unique forum for interaction between organizations that create, disseminate and use scientific and technical information. ICSTI's mission cuts across scientific and technical disciplines, as well as international borders, to give member organizations the benefit of a truly global community. ICSTI aims to:

- Provide leadership in promoting recognition of the value of scientific and technical information to the world's economic, research, scholarly and social progress,
- Enhance access to and delivery of information for all constituencies in business, industry, academia, government and the public through the exchange of information and the sharing of experience among international peers,
- Be a forum for interaction among all participants in information flow.

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Barry Mahon

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digital preservation initiatives

IFLA: International Federation of Library Associations

URL <http://www.ifla.org>

IFLA (The International Federation of Library Associations and Institutions) is the leading international body representing the interests of library and information services and their users. It is the global voice of the library and information profession. IFLA's Core Activity on "Preservation and Conservation" (PAC) was officially created during the IFLA annual conference in Nairobi in 1984 to focus efforts on issues of preservation and initiate worldwide cooperation for the preservation of library materials. But the PAC programme was effectively launched in Vienna during the 1986 Conference on the Preservation of Library Materials sponsored by the Conference of the Directors of National Libraries, with IFLA and UNESCO.

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digital preservation initiatives

INA

URL <http://www.ina.fr>

The INA is responsible for France's cultural audiovisual heritage. Under legal deposit legislation, INA is responsible for deposits from the country's six national television channels (public and commercial) and five public radio channels. Under the French communications law, INA is also responsible for maintaining the archive for public radio and television. INA is one of the three major partners in the PRESTO project. It is making heavy use of digitisation for preservation and also taking more material in born-digital form. INA wants to extend its mission to the French Web and is developing a harvester with the École Nationale Supérieure.

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France

digital preservation initiatives

INFER (Italian National Forum on Electronic Resources)

URL <http://www.infer.it>

INFER is a co-ordinating group set up to co-operate in promoting access to electronic information resources in Italian libraries. INFER seeks to further the efficient use of electronic information in libraries and to facilitate access by the public. To this end it encourages libraries to set up consortia and other types of agreement on acquisition and management of electronic resources and access to them. INFER acts as a reference and linkage point and develops initiatives to promote activities and programmes in the area of library electronic resource-sharing. In this connection it gathers and disseminates information on co-operation efforts under way in Italy and abroad, and suggests ideas and guidelines. INFER seeks to enhance awareness both at institutional political level and among librarians and end users. In this context INFER sees its most direct interlocutors as the central and local administrations libraries are dependent on (ministries, universities, local authorities, etc.), research institutions, the Italian Library Association (AIB) and other organisations in the sector.

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digital preservation initiatives

JISC (Joint Information Systems Committee of the Higher and Further Education Funding Councils)

URL <http://www.jisc.ac.uk>

The Joint Information Systems Committee (JISC) supports further and higher education by providing strategic guidance, advice and opportunities to use Information and Communications Technology (ICT) to support teaching, learning, research and administration. JISC is funded by all the UK post-16 and higher education funding councils. JISC works with further and higher education by providing strategic guidance, advice and opportunities to use ICT to support teaching, learning, research and administration. Preservation of digital resources will be of increasing importance for a wide range of activities and materials within UK further and higher education. The sector invests substantial sums in subscriptions to e-journals and in addition is investing heavily in digitisation and in arts and scientific data in digital form. The JISC aims to provide a strategy and a range of information and advice sources that assist in the wider process of digital preservation.

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digital preservation initiatives

kulturarw3 heritage

URL <http://www.kb.se/kw3/ENG/Default.htm>

The Royal Library (KB), Sweden's National Library has acquired, described, preserved and made available printed publications since the 17th century. This makes for long-established customs and knowledge in areas such as acquisition, preservation and accessibility to printed matter. Nevertheless, texts published electronically still remain, to a great extent, uncharted territory in relation to acquisition, preservation and accessibility. There are numerous points of issue that need to be considered, such as how to define selection standards, how to collect, preserve and finally present it to the public. There is little or no knowledge at all in understanding a number of these aspects. Therefore, Kulturarw3 is, in many respects, a project in constant progress.

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digital preservation initiatives

Long term archiving of digital documents in Germany: initiative for the construction of a draft valid for the whole of Germany

URL <http://www.dl-forum.de/Foren/Langzeitverfuegbarkeit/index.as>

The aim of the project was the preparation of a conception for the topic "Long term archiving and long term availability of digital documents in Germany"; + initiative for the construction of a draft valid for the whole of Germany, to avoid individual actions and isolated solutions, + dealing with the subject and far-reaching discussion of principal, questions, + coordination and planning of shared activities regarding long term, archiving and long term availability of digital documents in Germany, for the cooperative covering of tasks, + installation of a communication network among the participants, The conceptual draft was presented to the circle of specialists during two workshops on October 29 to October 30, 2002 and on November 14, 2002 and discussed. The priority of the workshops was not only to give information but to lead to first agreements for the construction of a national concept for long term archiving and long term availability. During the workshops a final resolution was adopted, serving as a basis for further activities and projects.

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64293
Germany*

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digital preservation initiatives

Lund University Library - Preservation and Access

URL <http://www.lub.lu.se>

digital preservation initiatives

The project Medieval Manuscripts at Lund University Library - Preservation and Access intends to digitize, to catalogue and to make the integrated database (pictures and catalogue entries) accessible on-line. The project, apart from making accessible the collection to the scholarly and general public, also has the character of a pilot project in the context of TEI (Text Encoding Initiative) in which a group of manuscript librarians are engaged in formulating general principles for the cataloguing of medieval and Renaissance material and of a set of rules for the creation and exchange of electronic texts for scholarly use. Another important dimension of the project is the creation of a permanent archival copy of the entire collection in the university server focusing on the its digital preservation, one of the functions of which, not least, is to protect the fragile originals which suffer from manual handling, lighting, climatic fluctuations etc. Thus, the project will achieve its twofold aim of Preservation and Access. The project is sponsored by The Bank of Sweden, Tercentenary Foundation, the Crafoord Foundation, the Kungl. Humanistiska Vetenskapssamfundet and Vetenskapssocieteten in Lund, the Ebbe Kock Foundation, the Ridderstad Foundation for Historical and Graphic Research and the Knut and Alice Wallenberg Foundation. Other projects that the library is engaged in are: DOAJ - Directory of Open Access Journals, DoD - Database of databases, Elin - electronic journals article search, About Elin@, MyLibrary, St. Laurentius digital manuscript library, Access to databases outside LU/LTH, News - E-resources, Test of electronic resources, Doctoral Dissertations ,

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digital preservation initiatives

METAe (The Metadata Engine Project)

URL <http://meta-e.uibk.ac.at/>

METAe will develop application software focusing on: the automatic recognition and extraction of metadata from printed material, especially books and journals, an omnifont OCR-engine for the recognition of "Fraktur" (a German style of black-letter text type) and other seldom type faces used in European printing history, on the development of five historical dictionaries supporting the OCR-engine, on an XML/SGML search engine and on an open source library for a simple web-application for presenting digitised printed material.

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digital preservation initiatives

META-LIB (Metadaten-Initiative deutscher Bibliotheken)

URL http://www.ddb.de/index_e.htm

The aim of the project had been to develop guidelines for the use of metadata, especially the Dublin Core Set for the indexation of born-digital and digitised resources in academic libraries. Die Deutsche Bibliothek in its project part had taken over responsibility of developing and testing conventions for the indexing of electronic resources in national bibliographies with utilisation of Dublin Core metadata including authority files. The project ended in January 2002. Die Deutsche Bibliothek continues engaging in the area of the standardization of metadata also after the end of the project and carries on the working field "Metadata" by its Office for Library Standards (AFS). On October 21/22th, 2002 the first metadata workshop of the AFS will take place at Die Deutsche Bibliothek being the final workshop of the META-LIB project at the same time.

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digital preservation initiatives

MetaNet

URL <http://www.epros.ed.ac.uk/metanet/index.html>

MetaNet is a network of excellence for harmonising and synthesising the development of statistical metadata, part of the European Union Fifth framework Research and Development program. Specifically it is part of the information Society Technology strand, number IST-1999-29093, to develop proposals for standards in the methodology used for describing statistical metadata and statistical information systems, to develop proposals for recommendations on the metadata objects in a common conceptual model of statistical metadata in order to preserve the digital data in the long-term. Metanet is based in the University of Edinburgh.

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digital preservation initiatives

MIMAS (Manchester InforMation and Associated Services)

URL <http://www.mimas.ac.uk/>

MIMAS (Manchester InforMation and Associated Services) is a JISC-supported national data centre run by Manchester Computing at the University of Manchester. MIMAS, formerly known as MIDAS, was designated a JISC National Data Centre in 1994 thus building upon a long record of providing computing services for UK academics. Since then the service has grown substantially both in terms of its portfolio of datasets and in its user base. As well as MIMAS being relevant to the work of individual researchers there is an increasing interest in the use of online datasets for learning and teaching. MIMAS has users from over 240 higher and further education institutions. Establish a role in the area of digital preservation. Look at the digital preservation requirements of the JISC and eScience to see how MIMAS might contribute to the solution of this growing need.

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digital preservation initiatives

MINERVA

URL <http://www.amitie.it/minerva/index.html>

MINERVA is a network of Member States' Ministries to discuss, correlate and harmonise activities carried out in digitisation of cultural and scientific content for creating an agreed European common platform, recommendations and guidelines about digitisation, metadata, long-term accessibility and preservation. Due to the high level of commitment assured by the involvement of EU governments, it aims to co-ordinate national programmes, and its approach is strongly based on the principle of embeddedness in national digitisation activities. It will also establish contacts with other European countries, international organisations, associations, networks, international and national projects involved in this sector, with a special focus on actions carried out in the DigiCult action of IST.

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digital preservation initiatives

National Library of Germany: Authority network long term Archiving project

URL <http://www.dl-forum.de/Foren/Langzeitverfuegbarkeit/index.as>

digital preservation initiatives

The aim of the project is an authority network long term archiving and a long term availability of digital resources in Germany. The authority network is meant to assure that digital resources in Germany are being archived, secured and made available on a long term. Through national and international collaboration a contribution shall be made to secure the global cultural heritage. Within the project among other things following services are being worked out: + a web-based German language information forum with various supplies, for long term archiving and long term availability of digital resources in, Germany as regards content, + criteria for trustworthy digital archives, + recommendations for procedures for the certification of digital archives, + recommendations for directives for the collection and criteria for the, selection for the archiving of digital resources, + policies for the long term archiving of digital resources, + a work structure for the long-term availability of digital resources in, museums, + a concept for a lasting organisational shape of the authority network, and of the information forum, + co-ordination of the division of responsibilities and of the takeover of, permanent tasks, particularly in the demarcation between the ambits of, libraries, archives and museums, The project is being carried out under the leadership of Die Deutsche Bibliothek in collaboration with five partners: Bayerische Staatsbibliothek München, Computer- und Medienservice / Universitätsbibliothek der Humboldt-Universität zu Berlin, Generaldirektion der Staatlichen Archive Bayerns, Institut für Museumskunde, Niedersächsische Staats- und Universitätsbibliothek Göttingen.

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digital preservation initiatives

National Library of Germany:Co-ordination Agency for online dissertations and post-doctoral theses

URL <http://www.dissonline.de/>

During the project "Dissertation Online", the Deutsche Forschungsgemeinschaft supported the development of solutions and assistances for the production, retrieval and long-term availability of digital dissertations. To keep the outcome of that project state-of-the-art, to initiate necessary further developments, and to build up a network of competence, the project "Build up of a Co-ordination Agency for online dissertations and post-doctoral theses" has been set up to expand the Co-ordination Agency DissOnline. The project comprises an analysis of the current infrastructure concerning online dissertations at German universities, including a comparison of the different promotion regulations, workflows, online support systems and portal software. The FAQ system is being built up in revised form, and the recommendations for doctoral candidates, libraries and universities will be replenished and enhanced. Legal issues are being dealt with in collateral service contracts. The outcome of the project shall be proposals to a uniform, workable procedure DissOnline in Germany that are to be discussed and harmonized with universities, computer centres and libraries.

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digital preservation initiatives

National Library Spain

URL

(In Spanish)

Spain

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[digital preservation initiatives](#)

NDAD (UK National Digital Archive of Datasets)

URL **<http://ndad.ulcc.ac.uk>**

The Digital Preservation Department at The National Archives is responsible for the programme for archiving and preservation of government electronic records of which NDAD is a part. The Records Management Department at the National Archives works with Departmental Records Officers in central government departments and other public bodies to select and transfer records to NDAD. NDAD operates within the ULCC facilities. ULCC has more than 25 years' expertise in the management and preservation of large quantities of digital data, particularly in hierarchical storage management systems. ULCC offers a National Data Repository service offering fast network access to extremely large amounts of data (up to 300 Terabytes).

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digital preservation initiatives

NEDLIB CONSORTIUM

URL <http://www.kb.nl/coop/nedlib/>

NEDLIB is a collaborative project of European national libraries. It aims to construct the basic infrastructure upon which a networked European deposit library can be built. The objectives of Nedlib concur with the mission of national deposit libraries to ensure that electronic publications of the present can be used now and in the future. The NEDLIB project has ended as of 31st January 2001. NEDLIB produced guidelines, standards and glossaries on digital preservation. Two of the main projects on Digital preservation were: An Experiment in Using Emulation to preserve Digital Publications and Metadata for Long Term Preservation. PDF versions of the reports are available from the website.

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digital preservation initiatives

Netherlands Institute for Scientific Information Services

URL <http://www.niwi.knaw.nl>

NIWI aims at providing scientific information on the influence of digital networks and on the practice of science in multiple fields. In the domain of research on the Dutch language and culture, the institute encourages the use and the availability of digital information, digitalisation projects, data archives and bibliographical databanks. NIWI is the library for the KNAW, and consists of a large collection biomedical journals and a historical collection. NIWI provides information about research and researchers in The Netherlands, in all scientific fields. Its current projects include one pilot effort in digital preservation. Titled Archiving Digital Academic Heritage, the project is exploring the feasibility of setting up digital archiving services for scientific or scholarly research material in the Dutch academic sector.

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digital preservation initiatives

Nordic Web Archive

URL <http://nwa.nb.no/>

The Nordic Web Archive (NWA) is the Nordic National Libraries' forum for co-ordination and exchange of experience in the fields of harvesting and archiving web documents. Since November 2000 until July 2002 the NWA cooperation were focused on developing software for accessing archived web documents. This activity was organized as a project with software developers at every Nordic National Library and a Project Manager at the National Library of Norway. The project was funded by Nordnet2 and the Nordic National Libraries. The outcome of the project, a solution for searching and navigating archived web document collections, was named "the NWA toolset". The NWA toolset was built using PHP and Perl. It utilizes open standards like the http protocol and XML extensively for communication between different parts of the system

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digital preservation initiatives

NORDinfo

URL <http://www.nordinfo.helsinki.fi>

(In Finnish)

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digital preservation initiatives

NPO (National Preservation Office)

URL <http://bl.uk/services/preservation/national.html>

The British Library houses the National Preservation Office, which is jointly funded by the Library and other major national institutions. The aim of the National Preservation Office is to provide an independent focus for ensuring the preservation and continued accessibility of library and archive material held in the United Kingdom and Ireland.

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digital preservation initiatives

PIN

URL <http://sads.cnes.fr:8010/pin/welcome.html>

This led to initial contact from BnF with staff at the CNES who had been part of the international earth observation and space data community that worked on developing the standard. Organizations interested in discussing the OAIS model met in June 2000, and PIN was then established as an informal forum and discussion list administered by CNES. The purpose of the forum is to contribute to work on developing the OAIS standard and on standards and practices for its implementation, and to share information between organizations. Participation is voluntary and PIN relies on the contribution of effort by the individuals and organizations that attend. Members take turns hosting meetings.

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digital preservation initiatives

PRESTO Preservation Technologies

URL <http://prestjoanneum.ac.at/index.asp>

PRESTO aims to develop state of the art technology in the preservation of film, video and audio media. The principle partners reflect the largest archives in Europe: BBC (UK), INA (FRANCE) and RAI (ITALY). Information has been collected from other major European archives. Although not focused on digital preservation specifically (it is primarily concerned with the preservation of analog material), PRESTO addresses questions that are relevant to the issue. Audiovisual material is one of the few areas where digitisation is considered to be the main option for preservation, because the originals are unstable or locked into obsolete technology. Resolving digital preservation issues has a major bearing on the long-term preservation of these materials.

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digital preservation initiatives

PRO (Public Record Office)

URL <http://www.pro.gov.uk>

The records of government are increasingly created in electronic form and the National Archives are playing an active role in storing and preserving digital material. The diversity of electronic records and frequent changes in computer technology present a range of challenges that need to be tackled in order to ensure that these records remain accessible over the long-term. Work in this area is undertaken at the National Archives by the Digital Preservation Department. The National Archives (PRO) provides advice and guidance to records managers across central government. This covers the entire life cycle of public records, in whatever format, from creation through to destruction or transfer to the National Archives. This work is undertaken in the National Archives by the Records Management Department.

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[digital preservation initiatives](#)

PRONOM

URL <http://www.pro.gov.uk/about/preservation/digital/pronom/>

PRONOM is an application developed by the Digital Preservation Department at the National Archives for managing information about the file formats used to store electronic records, and the software applications needed to render these formats. PRONOM is intended for use by anyone needing to preserve electronic records over the long term. The task of preserving digital objects requires the kind of reliable, sustained repository of file format information that PRONOM can provide.

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[digital preservation initiatives](http://www.pro.gov.uk/about/pronom)

URL <http://www.pro.gov.uk/about/pronom>

File format reference database that stores information about software products, their versions, file formats and their versions in a sure friendly web interface. Accessible form the internet, the system allows downloading of XML or CSV reports

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digital preservation initiatives

ROMEo project

URL <http://www.romeo.ac.uk>

The RoMEO Project (Rights MEtadata for Open archiving) is funded by the Joint Information Systems Committee for one year (1 August 2002 - 31 July 2003) to investigate the rights issues surrounding the 'self-archiving' of research in the UK academic community under the Open Archive Initiative's Protocol for Metadata Harvesting. It will perform a series of stakeholder surveys to ascertain how 'give-away' research literature (and metadata) is used, and how it should be protected. Building on existing schemas and vocabularies (such as Open Digital Rights Language) a series of rights elements will be developed. A solution for the protection of the IPR in metadata itself will also be created.

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digital preservation initiatives

Roquade

URL <http://www.roquade.nl>

Three Dutch university libraries were partners in the Roquade project: Utrecht University Library, Delft University of Technology Library, and the NIWI. The project researched development of electronic archives to enhance scientific communication in the academic sector. The project estimated the cost of metadata assignment, administration and quality control, and technical infrastructure for an electronic archive accepting 5,000 items per year to be 29 euros per item. ,

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digital preservation initiatives

Russian Information Society

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email:

digital preservation initiatives

Safeguarding European Photographic Images for Access (SEPIA)

URL <http://www.knaw.nl/ecpa/sepia/>

In 1999 the European Commission on Preservation and Access (ECPA) initiated a project aimed at the long-term preservation of all kind of photographic materials and defining the role of new technology in collection management. SEPIA (Safeguarding European Photographic Images for Access) is a EU-funded project focusing on preservation of photographic materials. The project was set up explicitly to bring together representatives from different types of institutions that hold photographs: libraries, archives and museums, as well as from research institutes. This followed from a basic principle in the work of the ECPA, to create a platform to exchange ideas and experiences of preservation issues that break through the traditional division into sectors. The project was funded by the European Union under the Culture 2000 programme for one year.

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digital preservation initiatives

SHERPA project

URL <http://www.sherpa.ac.uk>

SHERPA aims to investigate issues to do with the future of scholarly communication and publishing. In particular, it is initiating the development of openly accessible institutional digital repositories of research output in a number of research universities. These so-called 'e-print archives' will contain papers by researchers from the participating institutions. The project will investigate the IPR, quality control and other key management issues associated with making the research literature freely available to the research community. It will also investigate technical questions, including interoperability between repositories and digital preservation of e-prints.

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digital preservation initiatives

Testbed Digitale Bewaring (Digitale Duurzaamheid / Digital Preservation Testbed)

URL <http://www.digitaleduurzaamheid.nl>

The Testbed is experimenting with different types of digital files and records in order to determine the best approaches to long-term preservation. The project began in October 2000 and will conclude in September 2003. The testbed was preceded by a research study by Rothenberg and Bikson (1999). The digital preservation testbed is carrying out experiments according to defined research questions. It is researching three approaches to long-term digital preservation: migration, emulation, and XML. It is experimenting with text documents, spreadsheets, e-mail messages, and databases of different size, format, complexity, and nature. The effectiveness of each approach for different material is being evaluated, as are their limitations, costs, and application potential. The Testbed is focussing on three different methods of preserving digital information: migration; emulation; and XML. The Testbed will assess the pros and cons of the three approaches, their effectiveness, and their costs.

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digital preservation initiatives

The Austrian Society for History of Computer Science (OeGIG)-Oesterreichische Gesellschaft fuer Informatikgeschichte

URL <http://www.oegig.at/>

The Austrian Society for History of Computer Science (OeGIG) is documenting the development of informatics in Austria and trying to make the results available to the general public and especially to schools. This center is subdivided into four departments: Archive, Museum, Library and the Documentation Center. The archive is collecting and analyzing papers, records and documents of leading Austrian scientists. The museum is divided into a real museum and a virtual museum. The real museum contains a collection of fully operational historical objects documenting and representing the history of informatics. The virtual museum in the Internet provides the possibility to follow the development of informatics and information technology in Austria. The library encloses a collection of media concerning the history of computer science and a special library. The documentation informs about current projects and their results. It also briefs about ongoing activities in the field of history of computer science in Austria and other countries. One of the main goals of the project is the long-term preservation of their digital material.

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digital preservation initiatives

The Digital Preservation Coalition

URL <http://www.dpconline.org>

digital preservation initiatives

The Digital Preservation Coalition (DPC) was established in 2001 to foster joint action to address the urgent challenges of securing the preservation of digital resources in the UK and to work with others internationally to secure our global digital memory and knowledge base. The aim of the Digital Preservation Coalition is to secure the preservation of digital resources in the UK and to work with others internationally to secure our global digital memory and knowledge base. Initial support for the DPC came from JISC through part-time involvement of a JISC-funded program director and funds from membership contributions. The coalition is a limited company. The DPC has the following long-term goals: , producing, providing, and disseminating information on current research and practice and building expertise among its members to accelerate their learning and to widen the pool of professionals skilled in digital preservation; , instituting a concerted and coordinated effort to get digital preservation on the agenda of stakeholders in terms that they will understand and find persuasive; , acting in concert to make arguments for appropriate and adequate funding to secure the nation's investment in digital resources and ensure an enduring global digital memory; , providing a common forum for the development and coordination of digital preservation strategies in the United Kingdom and placing them within an international context; , promoting and developing services, technology, and standards for digital preservation; , forging strategic alliances with relevant agencies nationally and internationally and working together and with industry and research organizations to address shared challenges in digital preservation; and , attracting funding to support achievement of DPC goals and programs. , ,

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digital preservation initiatives

UK Govt Web Site Archive

URL <http://www.pro.gov.uk/about/preservation/digital/default.htm>

50 selected UK government websites captured by the Internet Archive and made available on the Wayback machine

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digital preservation initiatives

UKOLN Interoperability Focus

URL <http://www.ukoln.ac.uk/interop-focus/>

Centre of expertise in digital information management, providing advice and services to the library, information, education and cultural heritage communities. Interoperability Focus is a national activity, jointly funded by the Joint Information Systems Committee (JISC) of the Further and Higher Education Funding Councils and Resource: the Council for Museums, Archives and Libraries. Based within UKOLN, Interoperability Focus works closely with other staff on a range of issues including metadata, distributed systems and public library networking. Interoperability Focus also has a special interest in moving beyond the library sphere, specifically encompassing museums, archives, and other aspects of the cultural heritage, as well as Government and community information.

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digital preservation initiatives

UNESCO

URL <http://unesdoc.unesco.org>

The Archives Service was established in 1947. It operates as the archives repository of the Organization, the archives and records management unit of the Secretariat and as an information and reference service. The mission of the Archives is twofold: to document the history and activities of the Organization since 1945 to the present day and to help the Secretariat to manage its records today in order to ensure their preservation and accessibility. UNESCO has launched the Memory of the World Programme to guard against collective amnesia calling upon the preservation of the valuable archive holdings and library collections all over the world ensuring their wide dissemination. The first and most urgent need is to ensure the preservation, by the most appropriate means, of documentary heritage that has world significance. It is also important to make this heritage accessible to as many people as possible, using the most appropriate technology, both inside and outside the countries in which it is located. High quality text, sound and image banks could be compiled and made available on local and global networks, and reproductions made in all possible forms including compact discs, albums, books, postcards and microfilms. The proceeds from the sale of related products would then be ploughed back into preservation work.

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digital preservation initiatives

VIRLIB project

URL <http://lib.ua.ac.be/uilib.html>

The VIRLIB project's focus is on the development of a real delivery service of electronic documents added to Impala, i.e. the Belgian system of managing and transmitting interlibrary requests for loan. In other words, the system VIRLIB II will enable the interlibrary loan department of any scientific library affiliated to the Impala network to deliver directly to the users workpost, in electronic format, any article asked for by the user in question. More precisely, VirLib II will consolidate and improve the Acquisition module of the electronic documents (when a paper document is digitalized, it is automatically converted into an electronic document which the user can read) and develop a PDF server in order to deliver the documents to the user. Koninklijke Bibliotheek Albert I,

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digital preservation initiatives