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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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Executive Summary

The CNIPA, the National Center for Public Administration Informatics, was created in 2003 through a merger of two existing public administration organisations, one focussing on technical competencies and the other on Informatics. CNIPA's prime activities involve developing legislation to support ongoing implementation of electronic government and producing guidelines and best practice information on ICT systems, interoperability, and security.

Digital preservation at CNIPA is approached as part of its mission that involves the proposition of policies for the innovation and the elaboration of technological standards, functional and operative. Thus digital preservation is not considered as an explicit issue but more as a part of ongoing records management. CNIPA's external activities in promoting issues conducive to long term maintenance and preservation of digital records are more advanced than those inside of the organisation, although there is much knowledge that can be transferred between these sets of activities, such as compliance monitoring and legislative affairs.

CNIPA is active through conferences, newsletters, magazines and publications, and collaborative projects and works with other institutions. Furthermore CNIPA actively participates in the legislative sphere by emanating directives and circulars. Interviewees are aware of the problems caused by digital preservation and recognise that internally more action will be needed in the future to comply with their own directives and policies.

Chapter 1: The ERPANET Project

The European Commission and Swiss Confederation funded ERPANET Project¹ (Electronic Resource Preservation and Access Network) works to enhance the preservation of cultural and scientific digital objects through raising awareness, providing access to experience, sharing policies and strategies, and improving practices. To achieve these goals ERPANET is building an active community of members and actors, bringing together memory organisations (museums, libraries and archives), ICT and software industry, research institutions, government organisations, entertainment and creative industries, and commercial sectors. ERPANET constructs authoritative information resources on state-of-the-art developments in digital preservation, promotes training, and provides advice and tools.

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

¹ ERPANET is a European Commission funded project (IST-2001-32706). See [Hwww.erpamet.org](http://www.erpamet.org) for more details and available products.

Chapter 2: Scope of the Case Studies

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

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

This cross-sectoral fertilisation is a main focus of ERPANET as laid out in its Digital Preservation Charter.² It is of primary importance that disparate groups are given a mechanism through which to come together as best practices for digital preservation are established in each sector.

Aims

The principal aims of the study are to:

- build a picture of methods and match against context to produce best practices;
- accumulate and make accessible information about practices;
- identify issues for further research;
- enable cross-sectoral practice comparisons;
- enable the development of assessment tools;
- create material for training seminars and workshops; and,
- develop contacts.

Potential sectors have been selected to represent a wide scope of information production and digital preservation activity. Each sector may present a unique perspective on digital preservation. Organisational and sectoral requirements, awareness of digital preservation, resources available, and the nature of the digital

² The Charter is ERPANET's statement on the principles of digital preservation. It has been drafted in order to achieve a concerted and co-ordinated effort in the area of digital preservation by all organisations and individuals that have an interest and share these concerns. [Hhttp://www.erpanet.org/charter.php](http://www.erpanet.org/charter.php).

object created place unique and specific demands on organisations. Each of the case studies is being balanced to ensure a range of institutional types, sizes, and locations.

The main areas of investigation included:

- perception and awareness of risk associated with information loss;
- understanding how digital preservation affects the organisation;
- identifying what actions have been taken to prevent data loss;
- the process of monitoring actions; and,
- mechanisms for determining future requirements.

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

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

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

Chapter 3: Method of Working

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

The ERPANET interview instrument takes account of the strengths and weaknesses from both, developing a more focused questionnaire designed to be targeted at a range of strategic points in the organisations under examination. The instrument³ was created to explore three main areas of enquiry within an organisation: awareness of digital preservation and the issues surrounding it; digital preservation strategies (both in planning and in practice); and future requirements within the organisation for this field. Within these three themes, distinct layers of questions elicit a detailed discovery of the state of the entire digital preservation process within participants' institutions. Drawing on the experience that the partners of ERPANET have in this method of research, another important detail has been introduced. Within organisations, three categories of employee were identified for interview: an Information Systems or Technology Manager, Business Manager, and Archivist / Records Manager. In practice, this usually involved two members of staff with knowledge of the organisation's digital preservation activities, and a high level manager who provided an overview of business and organisational issues. This methodology has allowed us to discover the extent of knowledge and practice in organisations, to understand the roles of responsibility and problem ownership, and to appreciate where the drive towards digital preservation is initiated within organisations.

The task of selecting the sectors for the case studies and of identifying the respective companies to be studied is incumbent upon the management board. They compiled a first list of sectors at the very beginning of the project. But sector and company selection is an ongoing process, and the list is regularly updated and complemented. The Directors are assisted in this task by an advisory committee.⁴

³ See [Hhttp://www.erpanet.org/studies/index.php](http://www.erpanet.org/studies/index.php). We have posted the questionnaire to encourage comment and in the hope that other groups conducting similar research can use the ideas contained within it to foster comparability between different studies.

⁴ See [Hwww.erpanet.org](http://www.erpanet.org) for the composition of this committee.

Chapter 4: Introduction to the CNIPA

<http://www.cnipa.gov.it/>

The National Centre for Public Administration Informatics (CNIPA)⁵ is part of the Prime Minister's Office⁶ and was established in June 2003 in accordance with article 176 of the Legislative Decree no.1967⁷. This regulation modified the Legislative Decree n. 39/1993,⁸ through which AIPA – the Authority for Informatics in the Public Administration – had been established in 1993, and effectively transformed AIPA into the National Centre, CNIPA.

Since January 1st 2004, CNIPA inherited the functions and activities earlier exercised by another body, the Technical Centre⁹ as well as its human and financial resources.

The core activities of the Centre are:

- assisting and driving Government decision-making by working closely with the Ministry for Innovation and Technologies¹⁰ in promoting and elaborating technological standards, and by ensuring that they are understood and followed by the public administrations;
- developing technical rules and criteria for creation and management of IT systems in the administration;
- identifying criteria and rules for security, interoperability, open source, performance;
- defining and using processes and tools to lead the central and local administration's technological innovation process, promoting and defining e-government;
- interrelating with EU institutions and international organisations to prepare training for public administration personnel, so that they are oriented toward the use of technology.¹¹

The development of national legislation to support electronic government is at the heart of CNIPA's activities, practically enhanced by development and dissemination of technical guidelines and best practice information. Currently, effective work towards digital preservation at CNIPA is hampered by the major reorganisation effort specified above and the relatively small size of the organisation (around 150 people).

⁵ More information about CNIPA in general is available through its website, [Hhttp://www.cnipa.gov.it](http://www.cnipa.gov.it). Further information on CNIPA's functions can be found at [Hhttp://www.cnipa.gov.it/site/it-IT/II_Centro_Nazionale/Compiti_ed_attribuzioni/H](http://www.cnipa.gov.it/site/it-IT/II_Centro_Nazionale/Compiti_ed_attribuzioni/H).

⁶ Presidenza del Consiglio dei Ministri.

⁷ [Hhttp://www.cnipa.gov.it/site/_files/D%20L.%20n.%20196_%2030_06_%202003.pdf](http://www.cnipa.gov.it/site/_files/D%20L.%20n.%20196_%2030_06_%202003.pdf).

⁸ [Hhttp://www.cnipa.gov.it/site/_contentfiles/00121000/121093_dlgs39_1993.PDF](http://www.cnipa.gov.it/site/_contentfiles/00121000/121093_dlgs39_1993.PDF).

⁹ This is according to further legislation, namely: Legislative Decree 30 July 1999, n. 303, modified by art. 5 of Legislative Decree 5th December 2003, n. 343.

¹⁰ Italian Ministry of Innovation and Technologies:

[Hhttp://www.innovazione.gov.it/eng/index.shtml](http://www.innovazione.gov.it/eng/index.shtml).

¹¹ See the CNIPA website, op cit.

Chapter 5: Details of the Interviews

CNIPA was very interested to participate in the ERPANET case studies and composed a working group comprised of Prof. Mirella Casini Schaerf, Regulation and Training expert; Ing. Stefano Ercoli, IT Project Manager and member of the CNIPA Competence Centre on Electronic Record-keeping Systems;¹² and Dott. Alessandra Amati, Training Project Manager.

Contacts with the working group started at the beginning of April 2004. The questionnaire was filled in by the CNIPA working group by June 2004. After this, several phone calls and emails led to a refinement of parts of the case study.

¹² More information about the Centre for Competence is available from its website, [Hhttp://protocollo.gov.it/protocollo_01_05.asp](http://protocollo.gov.it/protocollo_01_05.asp)H. Its activities include promoting the realisation of informative systems for the management of documentary systems, coordinating the administrations, and raising their awareness by providing consultancy services and information.

Chapter 6: Analysis

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

- Perception and Awareness of Digital Preservation
- Preservation Activity
- Compliance Monitoring
- Digital Preservation Costs
- Future Outlook

Perception and Awareness of Digital Preservation

CNIPA deals with digital preservation as part of its institutional goals and considers it to be a part of the complete records life-cycle rather than a separate activity. The interviewees underlined the high value of digital information. In particular, they pointed at the ability of digital information to cross spatial and temporal barriers and at its potential to optimise organisation and provide more widespread access to information. Staff are keenly aware of the benefits of creating and using digital materials across geographically distributed locations.

Within the organisation, CNIPA digitises (or keeps as digital) all incoming and outgoing records entering into the registry system. Electronic document and records management is assuming increasing importance both inside and outside of CNIPA: not only has it implemented its own records management system, but also a significant part of its training programme for externals is devoted to the management of electronic documents and workflow. However, at present all of CNIPA's documentation is kept and managed by a double record management system, both paper-based and digital. This is due to the lack of legislative support for electronic records, as well as the perceived instability of technologies for the preservation of digital records.

The main problems

CNIPA identified two main categories of problems associated with digital preservation, namely technological and organisational ones. The technological problems include technological obsolescence, the constant rate at which information is transferred between CNIPA and its stakeholders, and the need to keep systems up to date. Organisational problems involve workflow issues, resolving old habits, and training people for different skills.

Asset value and risk exposure

CNIPA is aware of the value of its assets in digital form. As mentioned above, this principally lies in their suitability for dissemination and access purposes, which assists the organisation's role as a national centre offering advice and information to government organisations across Italy. This awareness is slowly expanding to the preservation and archiving stages of the records life-cycle. Risk analysis is recognised as fundamental for the planning, realisation and management of every system, with a distinct emphasis on security. Indeed, a recent publication aiming at raising awareness

of security issues outside of CNIPA paid particular regard to archiving and preservation.¹³

CNIPA feels that Public Administrations in general have to address issues such as security, privacy, and authenticity, where the risk exposure is particularly high in the digital environment.

Regulatory Environment

Italian legislation concerning records management and long-term digital preservation is very broad and has greatly changed in recent years. The most salient pieces of legislation, a co-ordinated set of legislative interventions, drafted during the years of 1997-2000, has defined a legislative and technical infrastructure to tackle records management activities (Gedoc 1 and Gedoc 2).¹⁴ With the Dpr 428/98 (later inserted into the Dpr 445/2000) and with the associated technical rules, all elements needed for the integration of the registry system (protocol and classification) with digital signatures and email were defined. According to Dpr 445/2000, the 1st of January 2004 should have been the latest date for realising and adopting automated registry systems and administrative procedures.

Other pieces of legislation were then needed to realise the interoperability amongst registry systems in use at the various public administration offices. These comprise a definition of modalities of common communication that allow electronic transmission of documents (Aipa circular Aipa/Cr/28 issued in May 2001¹⁵) and a list of operative systems on the market that satisfy a minimum set of security requirements (Aipa circular Aipa/Cr/31 issued in June 2001).

The most recent piece of legislation is the Decree of 14th October 2003, which approves the guidelines for the adoption of the automated registry system and the automated management of administrative procedures.

Several relevant rules concerning archiving on optical media have been issued recently as well, mainly the latest issue on technical rules for the reproduction and preservation of documents on optical supports of February 2004,¹⁶ which supersedes the previous one (AIPA n. 42/2001¹⁷). This new issue was necessary because the technology suggested for the signature of the preserved files was only applicable for very small files, and also because the definitions of digital document and digital signatures were formally contradicting those of the Dpr 445/2000.

Besides this legislation directly related to records management and digital preservation, other laws are applicable. For instance, personal data and transactions must be treated

¹³ Comitato tecnico nazionale sulla sicurezza informatica e delle telecomunicazioni nelle pubbliche amministrazioni (National Technical Committee for IT security and telecommunications within the Public Administrations), *Proposte concernenti le strategie in materia di sicurezza informatica e delle telecomunicazioni per la pubblica amministrazione*, March 2004.

Hhttp://www.innovazione.gov.it/ita/intervento/normativa/allegati/proposte_sicurezza_marzo04.pdfH.

¹⁴ Hhttp://www.cnipa.gov.it/site/_files/gedoc1.pdfH.

¹⁵ Hhttp://www.cnipa.gov.it/site/_contentfiles/00127900/127904_CR_28_2001.zipH.

¹⁶ *Deliberazione CNIPA n. 11 del 19 febbraio 2004* (G. U. N. 57 del 9/3/2004), on "Regole tecniche per la riproduzione e conservazione di documenti su supporto ottico idoneo a garantire la conformità dei documenti agli originali".

Hhttp://www.cnipa.gov.it/site/_contentfiles/01377100/1377105_DEL11_2004.pdfH.

¹⁷ Hhttp://www.cnipa.gov.it/site/_contentfiles/01377100/1377106_DEL42_2001.zipH.

according to the European directives and to the laws concerning personal data. For a detailed list of the full RM regulatory environment in Italy, please refer to appendix 1.

Preservation Activity

Policies and Strategies

According to its mission to assist and consult the public administration on IT, records management, and digital preservation issues,¹⁸ CNIPA is actively working on agreements, directives, standards, and strategies. Therefore it lays much emphasis on collaboration with governmental agencies, universities, archives, libraries, museums, and IT specialists. In particular, given its institutional role,¹⁹ CNIPA actively participates in the legislative sphere by emanating directives and circulars²⁰ on automating public organisations. It also produces a series of publications.²¹

Despite these consulting activities, however, there are currently no internal preservation policies and strategies in place at CNIPA. Still, the interviewees are confident that once the redefinitions of internal roles following institutional transformation have come to an end, these problems will be tackled.

Selection

Currently a working group is defining specific directions and procedures on selection, classification and retention schedules. Furthermore, Italian legislation requires the preparation of a “manuale di gestione”, a manual that defines the processes, the rules and the systems needed to manage and implement the record keeping system in order to ensure that the information is complete, accurate and identifiable. This manual covers selection and is in the process of being drafted by the same working group. Unfortunately, these documents are still in preparation and not yet considered fit for release. The responsible unit for the implementation and maintenance of these schedules is the Secretariat of the “Collegio” and the registry system.

Preservation

CNIPA's legal record keeping and archival requirements are met by preservation of paper records. The digital versions are kept for ease of access and as secondary copies, managed via a records management system that incorporates descriptive profile metadata. Such metadata is automatically generated by the system but is not saved with the intention of securing long-term preservation and focuses instead on basic data management.

CNIPA uses several different file formats for its digital records, generally widely-accepted standards such as TIFF, JPEG, XML, and PDF. So far no media refreshment, format conversion, nor migration has been performed for preservation or technical reasons, due primarily to the fact that CNIPA's records management has not yet reached full control of the record's life cycle.

¹⁸ See the respective statement at [Hhttp://www.cnipa.gov.it/site/it-IT/Il_Centro_Nazionale/Compiti_ed_attribuzioni/H](http://www.cnipa.gov.it/site/it-IT/Il_Centro_Nazionale/Compiti_ed_attribuzioni/H).

¹⁹ According to the Legislative Decree of 12 February 1993, n. 39.

²⁰ For more information concerning the legislative activity of CNIPA, see [Hhttp://www.cnipa.gov.it/site/it-IT/Il_Centro_Nazionale/Normativa/H](http://www.cnipa.gov.it/site/it-IT/Il_Centro_Nazionale/Normativa/H) and linked pages.

²¹ For the CNIPA newsletter see [Hhttp://www.cnipa.gov.it/site/it-IT/La_Documentazione/Newsletter_del_CNIPA/ListaAnni.html?Anno=2004H](http://www.cnipa.gov.it/site/it-IT/La_Documentazione/Newsletter_del_CNIPA/ListaAnni.html?Anno=2004H). For general information on CNIPA's publication activity see [Hhttp://www.cnipa.gov.it/site/it-IT/La_Documentazione/Pubblicazioni/H](http://www.cnipa.gov.it/site/it-IT/La_Documentazione/Pubblicazioni/H).

In the absence of a legally recognised digital record keeping environment, CNIPA is seizing the opportunity to investigate approaches and techniques developed by other institutions on their own digital records without much risk of danger to their legally required records. It is aware of several well-known standards and best practices and is keen to learn from other institutions and research efforts wherever appropriate. One of these efforts is its involvement in the Digital Object Identifier (DOI) project conducted by mEDRA.²² CNIPA is experimenting with this variant of a Persistent Identifier²³ on the website of the AIPA. All the documents published on the AIPA website receive a DOI. The DOI contains elements intended to provide an XML-based communication format for metadata related to the registration of DOIs for monographic products (“manifestations”), serial articles,²⁴ and monographic works (“abstractions”).

No specific area of deposit is designated for the preservation of digital information, but redundant copies of such information is kept for security reasons.

Access

CNIPA allows direct access to preserved information in their preservation format, although at the moment only TIFF and PDF files are accessible. Access is controlled through user authentication by means of user ID and password and is restricted to the CNIPA premises. The records are technically managed by using Access Control Lists (ACL).

Compliance Monitoring

While CNIPA is involved in monitoring the results of their collaboration with external bodies,²⁵ full monitoring of its internal management and procedures has not yet been implemented, and CNIPA is not up to date with the directives it emanates. Once again this is both due to the small structure with few personnel allocated and many responsibilities to face, and to the fact that the recent major organisational changes did not incorporate building an effective infrastructure for implementing internal monitoring. Thus, although there is no point in monitoring CNIPA’s current level of digital preservation activities, there is much transferable knowledge regarding external monitoring that staff can draw on to monitor CNIPA itself when the time for digital preservation will arrive.

Digital Preservation Costs

So far no internal measurement has been performed to assess the costs for digital preservation but the interviewees reported that the organisation is establishing a working group focusing on cost-benefits analysis. The finances for digital preservation activities are drawn from the Facilities Management budget, which also covers Information Systems. Interviewees are convinced that more money would be required for explicit preservation actions in the future. The results of the cost benefits analysis are expected to support this.

²² mEDRA is an initiative to create a European DOI Registration Agency; see [Hhttp://www.medra.org/H](http://www.medra.org/H).

²³ For more information on Persistent Identifiers, see the report and presentations from the ERPANET training event on Persistent Identifiers, held on June 17th - 18th in University College Cork, Ireland: [Hhttp://www.erpanet.org/events/2004/cork/H](http://www.erpanet.org/events/2004/cork/H).

²⁴ The specification allows for the registration of a DOI that is assigned to a serial article-as-work or a DOI that is assigned to a serial article-as-manifestation, ie. it gives the option of registering one DOI only, regardless of the different forms (paper or electronic) in which it appears, or of registering separate DOIs for each form.

²⁵ [Hhttp://www.cnipa.gov.it/site/it-IT/Attivit%
c3%a0/Monitoraggio,_verifica_e_valutazione/H](http://www.cnipa.gov.it/site/it-IT/Attivit%c3%a0/Monitoraggio,_verifica_e_valutazione/H).

Future Outlook

CNIPA is still working on preservation and has constituted a specific unit dealing with some of the related issues. However, the activities in place are judged as satisfactory by the organisation to date. CNIPA realises that the next needed activity is to define and implement a general plan for preservation and is looking for intra- and inter-sector collaboration to assist this.

Chapter 7: Conclusions

CNIPA's mission and goals directly involve its personnel in proposing policies and directives for the innovation and the elaboration of technological standards, and give CNIPA a leading role in providing inputs for the central and local administrations. It is aware of the issues and problems of digital preservation, and part of its mission is to study and build strategies to raise awareness at the national level.

Its commitment to teach, encourage and monitor *externally* is comprehensive and widely recognised. Internally, however, actions and improvements are taking a significantly slower pace, although staff recognise the challenges posed by digital preservation inside of CNIPA. The recent reorganisation is certainly a factor in this, as is the absence of specialised staff and specific legislation allowing records to be legally preserved in a digital format. This last challenge is one that the CNIPA is particularly well placed to address and exemplifies the importance of an appropriate legal framework to support and encourage digital preservation.

Notwithstanding this, CNIPA's active participation as participant and organiser of conferences, its important contribution to the development of awareness and knowledge on the issues related to preservation in the national environment, and its active collaboration to several projects of works with other institutions are positive factors to increase knowledge and awareness both internally and externally. Several internal working groups are currently being established and are in the process of delivering conclusions that will soon be translated into active measures to tackle preservation of digital records inside the organisation. CNIPA is aware of the discrepancy between its advice to public administration organisations and its own actions, and is keen to resolve it. A concerted approach that incorporates preservation explicitly as a part of its ongoing efforts in digital records management and draws on the experiences of different staff across the whole organisation will be key to achieving this.

Appendix 1: References

The website of the CNIPA can be found at <http://www.cnipa.gov.it/>

Decreto Legislativo 12 febbraio 1993, n. 39 (G.U. 20/2/1993, n.42). Norme in materia di sistemi informativi automatizzati delle amministrazioni pubbliche (Rules for automated informative systems of the public administrations), a norma dell'art. 2, comma 1, lettera m, della legge 23 ottobre 1992, n.421, http://www.cnipa.gov.it/site/_contentfiles/00121000/121093_dlgs39_1993.pdf

Decreto Legislativo 30 giugno 2003, n. 196. Codice in materia di protezione dei dati personali (Code for personal data protection), Articolo 176, published in *Gazzetta Ufficiale n. 174 del 29 luglio 2003, Supplemento ordinario n. 123*, http://www.cnipa.gov.it/site/_files/DL_30_06_2003.pdf

Decreto Legislativo 30 luglio 1999, n. 303. Ordinamento della Presidenza del Consiglio dei Ministri, a norma dell'articolo 11 della legge 15 marzo 1997, n. 59 (Order of the Presidency of the Council of Ministers), published in *Gazzetta Ufficiale n. 205 del 1 settembre 1999, Supplemento ordinario n. 167*, <http://www.parlamento.it/parlam/leggi/deleghe/99303dl.htm>

Decreto Legislativo 5 dicembre 2003, n.343. Modifiche ed integrazioni al decreto legislativo 30 luglio 1999, n. 303, sull'ordinamento della Presidenza del Consiglio dei Ministri, a norma dell'articolo 1 della legge 6 luglio 2002, n. 137 (Modifications and integrations to the order of the Presidency of the Council of Ministers), published in *Gazzetta Ufficiale n. 288 del 12 dicembre 2003*, http://www.cnipa.gov.it/site/_files/DL_5_12_2003_343.pdf

Italian Legislative Reference for managing records and preserving digital records:

Circolare 14/AIPA, 2 aprile 1993 (Decreto legislativo 12 febbraio 1993, n. 39. Norme in materia di sistemi informativi automatizzati delle amministrazioni pubbliche, a norma dell'art.2, comma I, lettera m), della legge 23 ottobre 1992, n. 421 (Rules for automated informative systems of the public administrations), published in *Gazzetta Ufficiale n.87 del 15 aprile 1993*, http://www.cnipa.gov.it/site/_contentfiles/00128200/128283_CR%2014_1993.pdf

Deliberazione 15/94, 28 luglio 1994 (Art. 2, comma 15, della legge 24 dicembre 1993, n. 537: Regole tecniche per l'uso dei supporti ottici (Deliberazione n. 15) (Technical rules for the use of optical supports), published in *Gazzetta Ufficiale n.216 del 15 settembre 1994*, http://www.cnipa.gov.it/site/_contentfiles/01377100/1377112_DEL15_1994.pdf.

Deliberazione 24/98, 30 Luglio 1998, Art. 2, comma 15, della Legge 24 dicembre 1993, n° 537: Regole tecniche per l'uso di supporti ottici, (Technical rules for the use of optical supports), published in *Gazzetta Ufficiale n. 192 del 19 agosto 1998*, http://www.cnipa.gov.it/site/_contentfiles/01377100/1377110_DEL24_1998.pdf.

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Appendix 2: List of acronyms used

ACL Access Control List

AIPA Autorità per l'informatica nella Pubblica Amministrazione – Authority for Informatics in the Public Administration

CNIPA Centro nazionale per l'informatica nella pubblica amministrazione – National Center for Public Administration Informatics

DOI Document Object Identifier

mEDRA Multilingual European DOI Registration Agency

URL Uniform Resource Locator

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