

# DPC/PADI What's new in digital preservation

A joint service of the **Digital Preservation Coalition** and [PADI](#)

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This is a summary of selected recent activity in the field of digital preservation compiled from the Preserving Access to Digital Information ([PADI](#)) Gateway and the [digital-preservation](#) and [padiforum-l](#) mailing lists.

1. Organisations
2. Projects
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## 1. Organisations

### 1.1 IFLA and the International Publishers Association

IFLA (International Federation of Library Associations and Institutions) and the International Publishers Association (IPA) have issued a joint statement on the archiving and preservation of digital information. It advocates seven principles and recommendations for the long-term preservation of digital materials. Both organisations recognise the need for action and will seek to make long term preservation a key agenda item internationally and the focus of standards development, research and support. Libraries are considered best placed to take responsibility for long term preservation; arrangements with publishers, and joint initiatives are forecast.

IFLA and International Publishers Association, *Preserving the memory of the world in perpetuity: a joint statement on the archiving and preserving of digital information.*

IFLA/IPA Steering Group, 27th June 2002.

Available at: <http://www.ifla.org/V/press/ifla-ipa02.htm>

### 1.2 The Arts and Humanities Data Service

The Archaeology Data Service (ADS) has published two more of the good practice guides being produced by the UK Arts and Humanities Data Service (AHDS). The first of these concerns archaeological geophysics and the variety of data that is produced, including raw measurement data, processed data and interpretative drawings. The second guide looks at the use of computer aided design (CAD) software in archaeological and architectural projects. The CAD guide is aimed at

those who create CAD files, at project managers and at those considering the management of CAD archives.

Armin Schmidt, *Geophysical data in archaeology: a guide to good practice*, Oxford: Oxbow Books, 2002. ISBN 1-900188-71-6. Web version available at:

<http://ads.ahds.ac.uk/project/goodguides/geophys/>

Harrison Eiteljorg II, Kate Fernie, Jeremy Huggett and Damian Robinson, *CAD: a guide to good practice*, Archaeology Data Service, 2002.

Available at: <http://ads.ahds.ac.uk/project/goodguides/cad/>

## 2. Projects

### 2.1 InterPARES project

The international InterPARES project has published a report on the findings of the first phase of the project, which ran from 1999 to 2001. The report contains reports from the project's task forces on authenticity, appraisal, preservation and strategy as well as from the national research teams. Work on the second phase of InterPARES is continuing.

*The long-term preservation of authentic electronic records: findings of the InterPARES project*. InterPARES project, 2002.

Available at: <http://www.interpares.org/book/index.cfm>

### 2.2 The Universal Virtual Computer (UVC)

An article published in the *New York Times* on the 29 August 2002 publicised the Universal Virtual Computer (UVC) approach to the preservation of digital data developed by Raymond Lorie of the IBM Almaden Research Center. Lorie's approach is an alternative to emulation based on the creation of programs that can extract data from an associated bit stream and return it to the caller in an understandable way. The program is written for a Universal Virtual Computer so all that should be needed in the future for executing the program is an interpreter of the UVC instructions. A pilot project undertaken by IBM Netherlands and the Koninklike Bibliotheek was successful in using UVC techniques to render the data structures of PDF files.

The *New York Times* article describes the UVC concept and includes quotes from Jeff Rothenberg, Johan Steenbakkers and Lorie himself. Another news article, published in March/April's *IEEE Software*, discusses the UVC concept in more detail and adds a review of the NARA sponsored work on persistent archive technology that was undertaken by the San Diego Supercomputer Center. Lorie also delivered an update on the UVC approach in paper delivered at the Joint Conference on Digital Libraries 2002 (JCDL 2002).

Anne Eisenberg, "A universal tool to rescue old files from obsolescence," *New York Times*, 29 August 2002.

Available at (registration required):

<http://www.nytimes.com/2002/08/29/technology/circuits/29NEXT.html?tnmailto>

Anne Eisenberg, "How best to leave a digital trail?" *International Herald Tribune*, 2 September 2002, p. 13.

Greg Goth, "Long-term data preservation efforts ramping up," *IEEE Software*, 19 (2), March/April 2002, 98-102.

Raymond A. Lorie, "A methodology and system for preserving digital data," In: *International Conference on Digital Libraries: proceedings of the second ACM/IEEE-CS Joint Conference on Digital libraries, 2002, Portland, Oregon, USA*. New York: ACM Press, 2002.

Abstract available at: <http://doi.acm.org/10.1145/544220.544296>

### **2.3 New reports from the Belgian DAVID project**

DAVID (Digital Archiving in Flemish Institutions and Administrations) is a project on the digital preservation of records funded by the Fund for Scientific Research - Flanders (Belgium). The project is a co-operation between Antwerp City Archives and the Interdisciplinary Centre for Law and Informatics (ICRI) of the Katholieke Universiteit Leuven (KU Leuven).

Two reports have recently been made available in English from the DAVID Web site. One is a report by Filip Boudrez and Sofie Van den Eynde on the archiving of Web sites, first published in Dutch in May 2002. This report elaborates why Web sites need archiving, provides information on organisational and technical approaches to their collection and management, and looks at a range of legal issues (copyright, personal data, liability, etc.). The second report is the English version of a deliverable by the same authors on the archiving of e-mails, first published in Dutch in October 2001. This looks in detail at the technical and legal issues related to the preservation of e-mail records.

Filip Boudrez and Sofie Van den Eynde, *Archiving Websites*, v. 1.0. Antwerp: Stadsarchief Stad Antwerpen; Leuven: KU Leuven, Interdisciplinair Centrum voor Recht en Informatica, July 2002. <http://www.antwerpen.be/david/eng/>

Filip Boudrez and Sofie Van den Eynde, *Archiving e-mail*, v. 1.0. Antwerp: Stadsarchief Stad Antwerpen; Leuven: KU Leuven, Interdisciplinair Centrum voor Recht en Informatica, August 2002. <http://www.antwerpen.be/david/eng/>

### **2.4 Reports on e-mail and XML from the Dutch Digital Preservation Testbed initiative**

The Dutch Digital Preservation Testbed (Testbed Digitale Bewaring) initiative has recently published three items relating to XML and digital preservation in English:

Maureen Potter, "XML for digital preservation: XML implementation options for emails," Digital Preservation Testbed, October 2002.

Available at: <http://www.digitaleduurzaamheid.nl/bibliotheek/docs/email-xml-imp.pdf>

*E-mail-XML Demonstrator: technical description*. Digital Preservation Testbed, October 2002.

Available at: <http://www.digitaleduurzaamheid.nl/bibliotheek/docs/email-demo-en.pdf>

*XML and digital preservation*. Digital Preservation Testbed white paper, September 2002.

Available at: [http://www.digitaleduurzaamheid.nl/bibliotheek/docs/white-paper\\_xml-en.pdf](http://www.digitaleduurzaamheid.nl/bibliotheek/docs/white-paper_xml-en.pdf)

## **2.5 Archiving the Avant Garde: Documenting and Preserving Variable Media Art**

Over the past few years, museums and galleries have increasingly begun to collect and exhibit art based on digital technologies, including multimedia installations and Internet art. Some of these are 'born-digital' in that they are not based on any previously existing non-digital form. Following older initiatives like the Guggenheim Museum's Variable Media Initiative and Rhizome.org's ArtBase, a consortium project called "Archiving the Avant Garde" is now beginning to investigate some of the issues associated with the preservation and documentation of variable media artworks. Specifically, the project will attempt to "develop, document, and disseminate strategies for describing and preserving non-traditional, intermedia, and variable media art forms, such as performance, installation, conceptual, and digital art." The collaboration includes the Berkeley Art Museum and Pacific Film Archive, the Solomon R. Guggenheim Museum, the Walker Art Center, Rhizome.org, the Franklin Furnace Archive, and the Cleveland Performance Art Festival and Archive.

Archiving the Avant Garde: [http://www.bampfa.berkeley.edu/ciao/avant\\_garde.html](http://www.bampfa.berkeley.edu/ciao/avant_garde.html)

Richard Rinehart, "Archiving the Avant Garde: Documenting and Preserving Variable Media," *D-Lib Magazine*, 8 (5), May 2002.

Available at: <http://www.dlib.org/dlib/may02/05inbrief.html#RINEHART>

Scott Carlson, "Museums seek methods for preserving digital art," *Chronicle of Higher Education*, 28 May 2002.

Available at: <http://chronicle.com/free/2002/05/2002052802t.htm>

Kendra Mayfield, "How to preserve digital art," *Wired News*, 23 July 2002.

Available at: <http://www.wired.com/news/culture/0,1284,53712,00.html>

Variable Media Initiative: <http://www.guggenheim.org/variablemedia/>

Rhizome.org: <http://rhizome.org/index.php>

## **3. Events**

A number of conferences and other events have taken place since the production of the last bulletin. Some of these have been completely concerned with digital preservation issues, while others are more general in scope but including some papers

with relevance to the subject. A number of these are listed here, together with links to relevant papers and event reports.

### **3.1 The State of Digital Preservation, Washington, D.C., 24-25 April 2002**

The Council on Library and Information Resources (CLIR) has now published the proceedings of this important international conference. Papers include an overview of technological approaches to digital preservation (Kenneth Thibodeau) and a research agenda (Margaret Hedstrom). The volume also includes activity reports from OCLC (Meg Bellinger), the US National Digital Infrastructure Initiative (Laura Campbell), the National Library of the Netherlands (Titia van der Werf) and the National Library of Australia (Colin Webb). A final paper reflects on some recent developments (Donald Waters).

*The State of Digital Preservation: An International Perspective: Conference Proceedings, Documentation Abstracts, Inc., Institutes for Information Science, Washington, D.C., April 24-25, 2002.* Washington, D.C.: Council on Library and Information Resources.

Available at: <http://www.clir.org/pubs/abstract/pub107abst.html>

Bonita Wilson, " Digital preservation: a long journey" [editorial], *D-Lib Magazine*, 8 (5), May 2002.

Available at: <http://www.dlib.org/dlib/may02/05editorial.html>

### **3.2 DPC Forum with Industry, London, UK, 5 June 2002**

This web page provides links to a summary meeting report and presentations by speakers from both the public and private sectors, as presented at the Digital Preservation Coalition Forum with Industry, held in, London on 5 June, 2002. Topics covered long-term trends and research and development issues for preservation and access to digital material in both government and industry.

DPC Forum with Industry: Future R & D for Digital Asset Preservation.

Available at: <http://www.dpconline.org/graphics/events/rdfuture.html>

### **3.3 RLG Open Forum, Atlanta, Georgia, 16 June 2002**

This page provides links to presentations made at the RLG Open Forum held as part of the American Library Association (ALA) Annual Conference in Atlanta, Georgia, USA. Topics include standards work in preservation metadata for various media, the Metadata Encoding and Transmission Standard (METS) and work with the Open Archival Information Systems (OAIS) model.

RLG Open Forum: Converging, Emerging Standards for Digital Preservation.

Available at: <http://www.rlg.org/longterm/forum02/index.html>

### **3.4 ACS National Meeting, Boston, Massachusetts, 18-22 August 2002**

The 224th American Chemical Society (ACS) National Meeting was held in Boston on 18-22 August 2002. This year the meeting included a symposium on digital

archiving. Presentations included descriptions of Elsevier Science's approach to digital preservation policies, partnership relations, technologies, etc., and an introduction to the DSpace institutional repository project of MIT Libraries.

C Amanda Spiteri, (ScienceDirect) "Digital Archiving: Experiences of a major commercial publishing house."

Abstract only available at:

[http://chemistry.org/portal/PersonalScheduler/EventView.jsp?paper\\_key=213142&session\\_key=35468](http://chemistry.org/portal/PersonalScheduler/EventView.jsp?paper_key=213142&session_key=35468)

Leah R. Solla (Physical Sciences Library, Cornell University) "Building digital archives for scientific information."

Abstract only available at:

[http://chemistry.org/portal/PersonalScheduler/EventView.jsp?paper\\_key=213141&session\\_key=35468](http://chemistry.org/portal/PersonalScheduler/EventView.jsp?paper_key=213141&session_key=35468)

Margret Branschofsky (MIT Libraries). "DSpace: MIT's Digital Repository."

Abstract available at:

[http://chemistry.org/portal/PersonalScheduler/EventView.jsp?paper\\_key=213143&session\\_key=35468](http://chemistry.org/portal/PersonalScheduler/EventView.jsp?paper_key=213143&session_key=35468)

### **3.5 IFLA 2002, Glasgow, UK, 18-24 August 2002**

The 68th IFLA General Conference and Council was held on 18-24 August 2002 in Glasgow. There were a number of presentations on digital preservation issues on the main programme (these are listed below), but the conference also hosted an important announcement from the Koninklijke Bibliotheek (National Library of the Netherlands) and Elsevier Science. An agreement between the two organisations will allow the Koninklijke Bibliotheek (KB) to receive digital copies of approximately 1,500 journals covering all areas of science, technology and medicine for deposit into the KB's e-Deposit system. The agreement also allows the KB to provide access to the archived journals within the library itself, with permission to extend this to remote access if Elsevier or its successor/s cease providing the journals online.

*National Library of the Netherlands and Elsevier Science make digital preservation history. Permanent digital archive assures perpetual accessibility of scientific heritage.* Press release, 20 August 2002.

Available at:

[http://www.kb.nl/kb/resources/frameset\\_kb.html?/kb/pr/pers/pers2002/elsevier-en.html](http://www.kb.nl/kb/resources/frameset_kb.html?/kb/pr/pers/pers2002/elsevier-en.html)

Selected presentations:

Abdelaziz Abid (Unesco), "The World Summit on the Information Society and Preservation of Digital Heritage."

Available at: <http://www.ifla.org/IV/ifla68/papers/150-85be.pdf>

Allan Arvidson (National Library of Sweden), "The collection of Swedish Web pages at the Royal Library: the Web heritage of Sweden."

Available at: <http://www.ifla.org/IV/ifla68/papers/111-163e.pdf>

Svein Arne Brygfeld (National Library of Norway), "Access to web archives: the Nordic Web Archive Access Project."

Available at: <http://www.ifla.org/IV/ifla68/papers/090-163e.pdf>

Pam Gatenby (National Library of Australia), "Legal deposit, electronic publications and digital archiving - the National Library of Australia's experience."

Available at: <http://www.ifla.org/IV/ifla68/papers/071-124e.pdf>

Peter Haddad and Pam Gatenby (National Library of Australia), "Providing bibliographic access to archived online resources: the National Library of Australia's approach."

Available at: <http://www.ifla.org/IV/ifla68/papers/069-152e.pdf>

Alenka Kavcic-Colic (National and University Library, Ljubljana, Slovenia), "Archiving the Web - some legal aspects."

Available at: <http://www.ifla.org/IV/ifla68/papers/116-163e.pdf>

Phegello Z. Letshela and Peter J. Lor (National Library of South Africa), "Implementing legal deposit of electronic publications in Africa: progress report from South Africa and Namibia."

Available at: <http://www.ifla.org/IV/ifla68/papers/072-124e.pdf>

### **3.6 ECDL 2002, Rome, Italy, 16-18 September 2002**

Several papers at ECDL 2002 concerned digital preservation issues. A session on the opening day included papers describing parts of the Web archiving experiments undertaken in France and Austria. The paper on archiving the French Web concentrated on describing issues relating to acquisition, while the paper on the Austrian Online Archive (AOLA) was concerned more with the analysis of the resulting archives. Other relevant papers described the 'migration on request' technique developed by researchers involved in the CAMiLEON project and the DSpace repository built by MIT Libraries and Hewlett Packard Laboratories.

S. Abiteboul, G. Cobéna, J. Masanès, and G. Sedrati, "A first experience in archiving the French Web," in: *Research and advanced technology for digital libraries: 6th European conference, ECDL 2002, Rome, Italy, September 16-18, 2002*, (Lecture Notes in Computer Science, 2458), Berlin: Springer, 2002, 1-15.

Abstract available at:

<http://link.springer.de/link/service/series/0558/bibs/2458/24580001.htm>

Full text available at: <ftp://ftp.inria.fr/INRIA/Projects/verso/gemo/GemoReport-229.pdf>

Phil Mellor, Paul Wheatley and Derek Sergeant, "Migration on request: a practical technique for preservation," in: *Research and advanced technology for digital libraries: 6th European conference, ECDL 2002, Rome, Italy, September 16-18, 2002*, (Lecture Notes in Computer Science, 2458), Berlin: Springer, 2002, 516-526.

Abstract available at:

<http://link.springer.de/link/service/series/0558/bibs/2458/24580516.htm>

Andreas Rauber, Andreas Aschenbrenner and Oliver Witvoet, "Austrian Online Archive processing: analyzing archives of the World Wide Web," in: *Research and advanced technology for digital libraries: 6th European conference, ECDL 2002, Rome, Italy, September 16-18, 2002*, (Lecture Notes in Computer Science, 2458), Berlin: Springer, 2002, 16-31.

Abstract available at:

<http://link.springer.de/link/service/series/0558/bibs/2458/24580016.htm>

MacKenzie Smith, "DSpace: an institutional repository from the MIT Libraries and Hewlett Packard Laboratories," in: *Research and advanced technology for digital libraries: 6th European conference, ECDL 2002, Rome, Italy, September 16-18, 2002*, (Lecture Notes in Computer Science, 2458), Berlin: Springer, 2002, 543-549.

Abstract available at:

<http://link.springer.de/link/service/series/0558/bibs/2458/24580543.htm>

### **3.7 2nd ECDL Workshop on Web Archiving, Rome, Italy, 19 September 2002**

Presentation slides and event reports from the 2nd ECDL Workshop on Web Archiving are now becoming available. The workshop concentrated on three main themes: technologies, collection policies and platforms for collaboration between Web archiving initiatives.

2nd ECDL Workshop on Web Archiving: <http://bibnum.bnf.fr/ecdl/2002/>

Rauber, A. & Masanès, J. "ECDL 2002 workshop report: Web archiving," *D-Lib Magazine*, 8 (10), October 2002.

<http://www.dlib.org/dlib/october02/10inbrief.html#RAUBER>

Michael Day, "2nd ECDL Workshop on Web Archiving," *Cultivate Interactive*, 8, November 2002 (forthcoming).

Available: <http://www.cultivate-int.org/>

### **3.8 Erpanet Workshop on XML as a Preservation Strategy, Urbino, Italy, 9-11 October 2002**

Presentations from the Erpanet workshop on XML are now available in PDF or PowerPoint format from the Erpanet Web pages.

Available at: <http://www.erpanet.org/www/products/urbino/urbino.htm>

### **3.9 DC-2002, Florence, Italy, 13-17 October 2002**

There was one paper with relevance to digital preservation given at the latest Dublin Core conference held in Florence. A team of researchers based in Japan gave a paper on how a collection management framework for digital resources might influence the metadata granularity required for digital resource management within a repository:

Maria Luisa Calanag, Koichi Tabata and Shigeo Sugimoto, "Linking collection management policy to metadata for preservation," DC-2002: Metadata for e-Communities: Supporting Diversity and Convergence, Florence, 13-17 October 2002.

Available at: <http://www.bncf.net/dc2002/program/ft/paper4.pdf>



### 3.10 DPC Forum: Preservation of e-Learning Materials and Cost Models for Digital Preservation, London, 15 October 2002

A meeting report and presentation slides from this event are available from the DPC Web site.

Available at: <http://www.dpconline.org/graphics/events/elearning.html>

## 4. Other recent publications

Daniel Gelaw Alemneh, Samantha Kelly Hastings, and Cathy Nelson Hartman, "A metadata approach to preservation of digital resources: the University of North Texas Libraries' experience," *First Monday*, 7 (8), August 2002.

[http://firstmonday.org/issues/issue7\\_8/alemneh/index.html](http://firstmonday.org/issues/issue7_8/alemneh/index.html)

An article describing the phased approach taken by the University of North Texas (UNT) Libraries to ensure long-term access to its digital resources. It argues that formulating preservation policies is important, as is the creation and maintenance of preservation metadata for objects and collections.

H. Anan, X. Liu, K. Maly, M. Nelson, M. Zubair, J. C. French, E. Fox and P. Shivakumar, "Preservation and transition of NCSTRL using an OAI-based architecture." In: *International Conference on Digital Libraries: proceedings of the second ACM/IEEE-CS Joint Conference on Digital libraries, 2002, Portland, Oregon, USA*. New York: ACM Press, 2002.

Abstract available at: <http://doi.acm.org/10.1145/544220.544256>

A paper on the NCSTRL (Networked Computer Science Technical Reference Library), a US federation of digital libraries providing resources on computer science materials. The paper described how the project team approached the migration of the NCSTRL collection to OAI (Open Archives Initiative) principles.

Larry Brandt, Valerie Gregg and Sue Stendebach, "The National Science Foundation Digital Government Research Program's role in the long-term preservation of digital materials," *RLG DigiNews*, 6 (5), 15 October 2002.

Available: <http://www.rlg.org/preserv/diginews/diginews6-5.html#feature2>

Svein Arne Brygfjeld, "Access to Web archives: the Nordic Web Archive Access Project approach," *Zeitschrift für Bibliothekswesen und Bibliographie*, 49 (4), 2002, 227-231.

Peter Buneman, Sanjeev Khanna, Keishi Tajima and Wang-Chiew Tan, "Archiving scientific data." ACM SIGMOD 2002, Madison, Wisc., 4-6 June 2002.

Available at: <http://db.cis.upenn.edu/Research/ki.html>

Brian F. Cooper and Hector Garcia-Molina, "Peer-to-peer data trading to preserve information," *ACM Transactions on Information Systems*, 20 (2), 2002, 133-170.

Abstract available at: <http://portal.acm.org/citation.cfm?doid=506309.506310>

Technical report available at: <http://dbpubs.stanford.edu/pub/2001-7>

Brian F. Cooper and Hector Garcia-Molina, "Bidding for Storage Space in a Peer-to-Peer Data Preservation System" 22nd International Conference on Distributed

Computing Systems (ICDCS'02), Vienna, Austria, 2-5 July 2002.

Abstract available at: [Abstract](#)

Technical report available at: <http://dbpubs.stanford.edu/pub/2002-22>

General Accounting Office, *Information management: challenges in managing and preserving electronic records*, Washington, D.C.: General Accounting Office, June 2002.

Available at: <http://www.gao.gov/new.items/d02586.pdf>

This is a report of the US General Accounting Office (GAO-02-586) focusing on the activities of the National Archives and Records Administration (NARA) with regard to the management and preservation of electronic records. This includes an evaluation of NARA's Electronic Records Archive (ERA) project. The appendices include a useful introduction to digital preservation strategies.

Andy Hunt and Dave Thomas, "Software archaeology," *IEEE Software*, 19 (2), March/April 2002, 20-22.

A short article describing the problems of understanding software code with little or no documentation. It ends with some suggestions as to how current developers could make code easier to work with in the future.

Inter-university Consortium for Political and Social Research (ICPSR), *Guide to Social Science Data Preparation and Archiving*, Ann Arbor, Mich.: ICPSR, 29 March 2002.

Available at: <http://www.icpsr.umich.edu/ACCESS/dpm.html>

This is ICPSR's guide to the task of preparing data for deposit in a public archive. It is mostly focused on quantitative data generated by statistical software like SPSS or SAS.

Lord Irvine of Lairg, "Government and the citizen: records management in 2004 and beyond," Records Management in Government Conference, Bristol, UK, 24 October 2002. London: Lord Chancellor's Department.

Available at: <http://www.dca.gov.uk/speeches/2002/lc241002.htm>

National Archives of Australia, National Library of Australia and National Office for the Information Economy, *Keeping government publications online: a guide for Commonwealth agencies*, Canberra: National Library of Australia, July 2002.

Available at: <http://www.nla.gov.au/guidelines/govpubs.html>

This short document explains how collaboration between agencies, the National Library of Australia, the National Archives of Australia and the National Office for the Information Economy will help to ensure that online Commonwealth Government publications remain accessible. It provides advice on the steps that Commonwealth agencies are required or recommended to take, provides definitions of 'publications' and 'records,' and elaborates in more detail the roles of the three national organisations that seek to work with agencies.

William J. Nixon, "The evolution of an institutional e-prints archive at the University of Glasgow," *Ariadne*, 32, July 2002.

Available at: <http://www.ariadne.ac.uk/issue32/eprint-archives/>

This article describes the development of an e-print archive at the University of Glasgow, including the aims of the archive, decisions about implementation, metadata and presentation. The article also notes the role of the library in encouraging submissions, providing advice on copyright, and arranging deposit, conversion of formats and reviews of metadata quality.

Pew Internet & American Life Project, *One year later: September 11 and the Internet*. Washington, D.C.: Pew Internet & American Life Project, 5 September 2002. Available at: [http://www.pewinternet.org/reports/pdfs/PIP\\_9-11\\_Report.pdf](http://www.pewinternet.org/reports/pdfs/PIP_9-11_Report.pdf)

This is a study of how American perceptions of the Internet were changed by the terrorist attacks on the United States on 11 September 2001. The report has two main strands. Firstly, it contains the results of a survey on how the attacks had affected opinions on the public availability of sensitive online information, i.e. that which could be of potential use to terrorists. Secondly, the report uses a preliminary analysis of archived Web resources (those that make up the "September 11 Web Archive" (<http://september11.archive.org/>), collected in association with the Internet Archive, the Library of Congress, *et al.*) to explain how use of the World Wide Web had evolved in response to the attacks.

Pira International, *Publishing in the knowledge economy: competitiveness analysis of the UK publishing media sector*. London: Department of Trade and Industry, 2002. Available at: <http://www.uk-publishing.info/competitive.asp>

This report is an e-commerce impact assessment of the UK publishing media commissioned by the UK Department of Trade and Industry (DTI) and co-managed by the DTI and UK Publishing Media (UKPM). Chapter 17 concerns digital media and recommends that the archiving of digital research should be organised at national level by the government.

Najla Semple, *Digital archives research project: a report and recommendations*, Edinburgh: Edinburgh University Library, 29 May 2002. Available at: <http://www.lib.ed.ac.uk/sites/digpres/index.shtml>

This is the final report from a project initiated by the Special Collections Department of Edinburgh University Library. The project aimed to act as a focus for raising digital preservation issues across the whole university.

Yale University Library and Elsevier Science, *YEA: the Yale Electronic Archive: one year of progress*, New Haven, Conn.: Yale University Library, February 2002. Available at: <http://www.library.yale.edu/~okerson/yea/>

A progress report on Yale University Library and Elsevier Science's joint Digital Preservation Planning Project on the preservation of electronic journals, funded by the Andrew W. Mellon Foundation. The project sought to "understand better the scope and scale of digital journal preservation" and to "identify practical next steps" for a large collection of commercially published journals. The report recognises the need for co-operative efforts and standards and relationships between publishers and repositories, and discusses the building of a prototype archive.

Jeffrey R. Young, "'Superarchives' could hold all scholarly output," *Chronicle of Higher Education*, 5 July 2002. Available at: <http://chronicle.com/free/v48/i43/43a02901.htm>

This news article discusses the creation of online 'institutional repositories' to preserve and provide access to the intellectual output of institutions like universities. These outputs include published and unpublished research papers, data sets, field notes, images, etc. Models that are very briefly discussed in the article include MIT's DSpace project, the California Institute of Technology's digital repository, the University of California's Scholarly Repository, Ohio State University's Knowledge Bank, and the University of Southampton's eprint.org initiative.

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