

COPYRIGHT AND LICENSING ISSUES FOR DIGITAL PRESERVATION AND POSSIBLE SOLUTIONS

ADRIENNE MUIR

¹ Department of Information Science, Loughborough University
Loughborough, United Kingdom
e-mail: A.Muir@lboro.ac.uk

The preservation of digital publications involves various technical, legal, economic and organization issues. Copyright law and licensing arrangements may prevent problems for libraries that wish to preserve digital resources in the long-term or even short term. Digital preservation strategies involve copying and it is not clear with copyright legislation in the UK and Europe will allow the sort of copying needed. The complex nature of digital publications and new publishing models present various problems including resource intensive rights clearance and reliance on publishers to continue to provide access and preserve digital publications. Extension of legal deposit laws may go some way to overcoming access versus ownership issues, but the issue of rights to copy deposited material remains. Other possible solutions include model licence agreements that that provide for preservation in some way. There is a need for research to clarify issues identified in the preservation and legal literature and to provide a clearer picture of the activities and perceptions of stakeholders in digital preservation, including authors, publishers and libraries.

Keywords: digital preservation; copyright; licensing; electronic publishing

INTRODUCTION

The preservation of digital publications is an increasingly high profile issue. Activity in this area in the library and information sector really began to expand in the mid-1990s with the publication of important reports such as the Commission on Preservation and Access and Research Libraries Group Task Force on Archiving of Digital Information. Digital preservation is challenging on a number of levels. There are various technical, legal, economic and organizational issues to be dealt with. Copyright has always been an issue in the development of digital libraries; copyright legislation in many countries was not designed with the digital environment in mind. Acquiring, managing and providing access to digital information in libraries involves making copies, which is rarely the case with more traditional library material. There is an increasing shift away from the model of the library as a physical repository of information artifacts to provision of licensed access to digital resources.

The aim of the Copyright and Licensing for Digital Preservation research project is to investigate whether and how copyright legislation and licensed access to digital content hinders the ability of libraries to provide long-term access to that content and to suggest ways in which the problems can be overcome. The questions the research will answer are: what are the copyright implications of digital preservation strategies; does copyright legislation allow libraries to carry out copying for digital preservation; to what extent do licences that provide access to digital material in libraries take account of preservation needs; and how publishers and information providers are planning to achieve the provision of perpetual access to digital material for libraries.

The project is focused on the UK situation, but approaches in other countries are also being examined to provide input into project recommendations. The project aims to make recommendations for: amendments to UK legislation; model licences for digital preservation copying and long-term access; and how legislators, information providers and libraries can work together to ensure long-term access to digital information.

METHODS ADOPTED

The research involves a survey of the literature, questionnaire surveys and interviews with all stakeholders in this issue, including libraries, publishers, intermediaries, reproduction rights organisations, authors, and policy makers. The findings of the project will be presented to stakeholder groups at a seminar at the end of 2003. Stakeholders will have to opportunity to discuss these findings and make comments and recommendations that will be incorporated into the final outcomes of the project.

This paper presents the initial findings of the literature review. The review involved a survey of the the library and information, legal and related literature using a variety of bibliographic tools. The aim was to identify digital preservation problems and strategies and associated copying implications. Copyright and other relevant

legislation in the United Kingdom were also identified and scrutinised as were commentaries on whether preservation copying provisions are likely to allow for digital preservation needs. Preservation provisions in other countries were also identified. The literature survey also included other approaches to managing digital preservation such as licensing and rights metadata. There is much information available on digital preservation problems and strategies, but there is little literature available on the copyright and licensing issues.

RESULTS

DIGITAL PRESERVATION PROBLEMS AND STRATEGIES

While digital media have a relatively short life expectancy, there are other issues that need consideration as well. The biggest threat is arguably changes in coding, formats, software, operating systems and hardware that can render digital material unreadable.

The complex nature of much digital information can also cause problems. There is a plethora of formatting standards for different types of digital information which may not be implemented uniformly or may change rapidly. Complex digital material may also be dependent on software for search and retrieval and other functionality. The rights in the content and any associated software may belong to a number of different individuals or organisations. Digital information may be surrounded by technology designed to protect it from unauthorised copying and redistribution that may also inhibit or prevent preservation actions.

Libraries are increasingly paying for access to information held remotely. If libraries do not physically own digital material, they cannot preserve it. Publishers may or may not have a commitment to preserving their own information; this is likely to depend to an extent on the type of publisher and its mission.

Redundancy is part of traditional preservation management and creating backups is part of good security practice for digital data. Other strategies include migration and emulation and variations on these two strategies.

Migration is "the periodic transfer of digital material from one hardware/software configuration to another, or from one generation of computer technology to a subsequent generation."¹ While refreshment and media migration ensure that a reliable bit stream of the digital object is maintained, migration strategies may result in a loss of data, or changes in functionality and look and feel of the digital object. Wheatley has discussed different types of migration and the specific types of activities associated with each type². These may include stripping down information into its most basic form for ease of access to the intellectual content. It may involve conversions between formats or recreation of the software aspects of the resource. The look and feel and functionality of digital resources may be recorded in some way to provide a record. Migration on demand may minimize the frequency of intervention because "All the migration from an obsolete format to an appropriate current day format happens at the point of request."³ However, this approach will require the maintenance of migration tools.

Emulation involves a current or future technological platform mimicking an older or obsolete platform and can be at the hardware or software level. There is likely to be some sort of encapsulation of content, software and metadata. Metadata could include a specification for an emulator⁴. Alternatively, emulators could be designed and then updated over time⁵. Emulation will involve refreshing or migrating media over time to keep the encapsulated material safe. Reengineering of software may also be necessary to specify or create emulators.

Lorie⁶ suggests that whilst emulation could mimic obsolete technologies to allow display of the original, it will not allow future users to manipulate the information. The aim of the Universal Virtual Computer (UVC) idea is to develop "...virtual machines that can execute essential functions on a variety of platforms"⁷. Information is converted to a "preservation format" that will allow a program to extract data from the bit stream and present it in an understandable form. The program runs on an UVC, a program comprising low-level instructions that can, in theory, be interpreted to run on any computer in the future⁸.

All of these potential strategies have something in common. In order to preserve digital information, it has to be copied and perhaps changed in some way. The copying implications of different preservation strategies are summarised below as are the copyright difficulties presented by the nature of digital publications and how they are distributed.

TABLE 1 DIGITAL PUBLICATIONS – COPYRIGHT IMPLICATIONS

STRATEGY	COPYING ACTIONS REQUIRED	COPYRIGHT PROBLEMS
Media refreshment and change	<ol style="list-style-type: none"> 1. Copying bytestreams from old media to fresh copies 2. Copying bytestreams from obsolescent media to new media types 	Copy protected media Multiple rights owners in content
Migration	<ol style="list-style-type: none"> 1. Conversion of resource to different format 2. Recording information about look, feel and functionality of original resource 3. Recreating or recording original software environment and possibly also content 	Third party software Strategies could result in loss of look and feel, functionality or even content
Emulation and UVC	<ol style="list-style-type: none"> 1. Media refreshment and media migration of content, application software, operating software, hardware specifications, software specifications 2. Conversion of content into interim formats and further conversion into current formats (UVC) 3. Possible reverse engineering of software for emulation 	Access rather than ownership and responsibility for preservation

UK LAW

Current legislation in the UK provides limited exceptions to copyright. One of these exceptions is the so-called "library privilege", including copying for purposes of preservation or replacement⁹. This exception is very narrowly defined; it permits a librarian or archivist of a *prescribed library* (including school, university, further education, learned society, public and government libraries) or any *archive* to make a copy from any item in its permanent collection in order to preserve or replace that item, providing that certain conditions are complied with.

Almost all digital information is made available via one form of database or another. A EU Directive on databases was issued in 1996 and a Statutory Instrument was subsequently passed in the UK to implement this Directive into UK law, and thereby further protect databases¹⁰. Databases under some circumstances can enjoy double protection: the database or *sui generis* right, and copyright. The database right applies where there has been a substantial investment in obtaining, verifying or presenting the contents of the database. The database right prevents the unauthorised extraction and reutilization of material from a database, whether it enjoys copyright or not. As a result, both the copyright residing in the database and the database right restrict the transference of databases to another medium. However, it is not an infringement if a person, who has a right (by licence or otherwise) to use the database exercises their right to access the database and to use its contents by whatever means necessary. Any term in the contract or licence that prohibits this is irrelevant. It is not clear what this actually means for digital preservation.

A European Union Copyright Directive¹¹ designed to harmonise various aspects of copyright law amongst the Member States will be implemented soon in the UK. The Directive recommends that exceptions and limitations to copyright should be defined more harmoniously throughout EU Member States. However, it does not make particular exceptions to copyright compulsory and it is not yet known how the UK will implement the Directive. Some of the provisions of the EU Directive are of potential interest. For example, Article 6 of the Directive instructs Member States to provide adequate legal protection against the circumvention of technological measures that provide legal protection for copyrighted works. However, section 4 of Article 6 states that:

... in the absence of voluntary measures taken by rightholders, including agreements between rightholders and other parties concerned, Member States shall take appropriate measures to ensure that rightholders make available to the beneficiary of an exception or limitation ... the means of benefiting from that exception or limitation ... where that beneficiary has legal access to the protected work or subject-matter concerned.

Depending on interpretation, this may allow preservation agencies the right to circumvent protection measures in order to preserve the material once they have met the requirements of the exception, if it is considered to comply with the so-called three-step test. This test is used as a standard in framing exceptions to copyright and ensures that the exceptions are not in conflict with the normal exploitation of the work and do not unreasonably prejudice the legitimate interests of the rights holders. Since the existing preservation exception does not allow much copying for preservation purposes, this is not particularly useful.

In summary, at the moment it does not look as if UK copyright law at present, or in the near future will allow digital preservation related copying.

POTENTIAL SOLUTIONS AND IMPLICATIONS

THE LAW

There are some examples of countries that have legislation that looks more amenable to copying for digital preservation. In the United States, the Digital Millennium Copyright Act (DMCA) expressly allows authorised institutions to make up to three digital preservation copies of an eligible copyrighted work in certain circumstances. It allows the institution to loan those copies to other institutions and permits preservation, including by digital means, when the existing format in which the work has been stored becomes obsolete¹². In addition, Besek comments that “*There is no prohibition on the act of circumventing rights controls ... Legislators believed if copies made as a consequence of circumventing rights controls were excused by copyright exceptions or privileges, there should be no liability for the circumvention.*”¹³ The Canadian Copyright Act allows electronic publications to be converted to a contemporary format if necessary for preservation purposes. The work must be in the library's permanent collection and the copy must be made in order to maintain the collection¹⁴.

ACQUISITION OF DIGITAL MATERIAL FOR PRESERVATION PURPOSES

If libraries are to ensure the preservation digital information, they can either rely on publishers to take on this responsibility or physically acquire the information themselves. Extending legal deposit to cover digital publications may get over the problem of access to rather than ownership of digital information, but only to a limited extent because legal deposit only covers the national digital output. Even if publishers deposit their digital information, the question of whether deposit libraries would be able to carry out preservation related copying or whether further provision will be have to be made through copyright law would need to be clarified. The proposed new UK legal deposit legislation acknowledges this by providing for amendments to rights legislation so that “copyright, publication right, database right and any similar right” is not infringed by deposit libraries who need to copy for preservation or the provision of access or uses making temporary copies for access purposes¹⁵. However, publishers may well have concerns about this. It also still leaves the question of whether other types of libraries can legally preserve digital material they physically own.

Downloading information from publisher sites will involve copying. Depending on how it is implemented, new UK legal deposit legislation and any accompanying amendments to rights legislation, may deal with harvesting Web material “published” in the UK. Other countries are also addressing this issue. The Norwegian National Library has embarked on a project that will, amongst other things, explore the legal issues of collecting online material. The Swedish government issued a decree authorising the Royal Library to not only collect Swedish web sites on the Internet but also to allow the public access to it within the library premises¹⁶. The French government has adopted a law requiring every French web site to be archived¹⁷, allowing preservation organisations to harvest material at regular intervals. The UK's Joint Information Systems Committee (JISC) and the Wellcome Trust recently commissioned a study on legal issues related to Internet archiving in the UK, European Union the USA and Australia¹⁸.

LICENCES AND PERPETUAL ACCESS

Libraries could ask rights holders for permission to copy for preservation purposes. However, clearing rights for the preservation of digital materials is likely to be resource intensive and difficult. The complexity of the rights associated with many complex digital resources can make clearing rights problematic and time consuming.

Model licences could reduce the burden on libraries and publishers. The JISC Model Licence for Journals¹⁹ allows the licensee to make back up copies of the licensed material in order to make them accessible locally. The publisher undertakes to provide access to the archive of subscribed material once a subscription ends. However, this relies on other players taking responsibility for and ensuring preservation. Alternatively, the publisher may provide the former licensee with an archival copy of the material that was subscribed to, in a mutually agreed format. However, the delivery of the archival copy will not ensure long-term access to the information unless the licensee has permission to copy for preservation purposes. JISC has recently funded a one year study to explore with publishers and other stakeholders archiving and access provisions and evaluate past licences and future options for archiving of licensed e-journals and access arrangements²⁰.

An alternative to individual libraries seeking permissions is some form of central rights clearance operation. We are not aware of any such schemes in place for preservation copying of digital material in the UK or elsewhere.

METADATA

Yet another possible alternative to clearing rights could be including rights information in metadata associated with digital material. The OCLC/RLG Working Group on Preservation Metadata²¹ has developed a preservation metadata framework that includes a rights-related element. This needs further development and it is not clear how it would be implemented and populated. The metadata would have to come from rights holders, so it would have to be incorporated into publisher metadata schemes, such as the Online Information exchange (ONIX)²². However, publishers may not have any incentive to populate preservation rights elements.

DISCUSSION AND CONCLUSIONS

The digital preservation and legal literature we have examined gives an indication of copyright and licensing issues, but little in the way of clear answers and solutions. There are many aspects of the issue and any potential solutions to be explored. A basic question is what publishers and libraries are actually doing. It is also not clear how big the problem is. The preservation of information that only exists in digital form seems to be the most urgent problem, but it is not clear how much of the resources libraries are likely to provide access to exist only in digital form. Trends in the electronic publishing industry in terms of use of standards and whether the pace of change is likely to slow down also need to be explored. Another question is what proportion of libraries will actually be actively involved in preservation. It may be that the preservation of digital resources will only be carried out by a small number of libraries, such as deposit libraries. There seems to be a general view that publishers are not and do not want to be involved in long-term preservation of their material, but little research here. There has been some work on examining legislative provisions, but no clear guidance on whether and how law could be amended and what the views of rights holders would be. The perceptions and views of different stakeholders including publishers, libraries and also authors on responsibility for preservation and how the rights aspects could be managed without damaging the interests of a particular stakeholder group are also not clear.

The aim of the remainder of this project is to get a clearer picture of this issue, in the United Kingdom at least.

ACKNOWLEDGEMENTS

The Copyright and Licensing for Digital Preservation project is funded by the UK Arts and Humanities Research Board. This paper is a revised version of an article that appeared in the *June issue of Library + Information Update*.

REFERENCES

¹ Waters, D. & J. Garrett. *Preserving digital information: report of the Task Force on Archiving of Digital Information commissioned by the Commission on Preservation and Access and the Research Libraries Group*. Washington, D.C.: Commission on Preservation and Access, 1996.

² Wheatley, P. Migration: a CAMiLEON discussion paper. Ariadne, 29.
<<http://www.ariadnes.ac.uk/issue29/camileon/intro.html>>

³ Cedars Project. *Cedars guide to digital preservation strategies*.
<<http://www.leeds.ac.uk/cedars/guideto/dpstrategies/dpstrategies.html>>

⁴ Rothenberg, J. *Avoiding technological quicksand: finding a viable technical foundation for digital preservation: a report to the Council on Library and Information Resources*. CLIR, 1999.
<<http://www.clir.org/pubs/reports/rothenberg/contents.html>>

⁵ Holdsworth, D. & P. Wheatley. Emulation, preservation, and abstraction. *RLG DigiNews*, 5(4).
<<http://www.rlg.org/preserv/diginews/diginews5-4.html>>

⁶ Lorie, R., 2001. A Project on preservation of digital data. *RLG DigiNews*, 5(3) 2001.
<<http://www.rlg.org/preserv/diginews/diginews5-3.html#feature2>>

⁷ K. Thibodeau. Building the archives of the future: advances in preserving electronic records at the national archives and records administration. *D-Lib Magazine*, 7(2) 2001.
<<http://www.dlib.org/dlib/february01/thibodeau/02thibodeau.html>>

⁸ *Ibid.*

⁹ Great Britain. *Copyright, designs and patents Act 1988*, Ch. 48, 36 & 37 Elizabeth II, ss. 37-42. London : HMSO, 1988.

-
- ¹⁰ Great Britain. *Copyright rights in databases: the copyright and rights in databases regulations 1997*, 45 & 46 Elizabeth II. London : HMSO, 1997.
- ¹¹ European Commission. *Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society*. 2001.
- ¹² United States. *Digital millennium copyright Act*, Title IV (DMCA) 1998.
<www.loc.gov/copyright/legislation/dmca.pdf>.
- ¹³ Besek, J.M. *Copyright issues relevant to the creation of a digital archive: a preliminary assessment*. Washington, D.C.: Council on Library and Information Resources; Library of Congress, 2003, p. 12.
- ¹⁴ Institute for Information Law, 1998. *Copyright aspects of the preservation of electronic publications*. IViR Reports 7. University of Amsterdam, 1998.
<www.ivir.nl/Publicaties/koelman/KBeng2.doc>.
- ¹⁵ *Legal Deposit Libraries Bill*. Bill 26 53/2, 7.
- ¹⁶ *New decree for Kulturarw3*, 2002:287. 2002.
<http://www.kb.se/Info/Pressmed/Arkiv/2002/020605_eng.htm>.
- ¹⁷ *Entire French web to be archived*, 2001. <<http://www.europemedia.net/shownews.asp?ArticleID=4075>>
- ¹⁸ Charlesworth, A.. *Legal issues relating to the archiving of Internet resources in the UK, EU, USA and Australia: a study undertaken for the JISC and Welcome Trust*. JISC; Welcome Trust, 2003.
- ¹⁹ Joint Information Systems Committee. *The JISC model licence for journals*.
<<http://www.nesli.ac.uk/modellicence.html>>.
- ²⁰ *Archiving e-publications* < http://www.jisc.ac.uk/index.cfm?name=project_epub_archiving>
- ²¹ OCLC/RLG Working Group on Preservation Metadata. *Preservation metadata and the OAIS information model: a metadata framework to support the preservation of digital objects*. OCLC/RLG, 2002. <http://www.oclc.org/research/pmwg/pm_framework.pdf>
- ²² Martin, D. *ONIX International Guidelines for Publishers Level 1*. London: Book Industry Communication, 2001. <<http://www.editeur.org/onixfiles1.2.1/ONIX%20Guide%20Level%201%20R1.2.1.PDF>>