# THE

# PUBLISHING OF ELECTRONIC SCHOLARLY

# MONOGRAPHS AND TEXTBOOKS

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# ABSTRACT

This eLib Supporting Study was conceived to investigate the incidence and nature of the publishing of electronic scholarly monographs and textbooks in the United Kingdom. Given the international nature of academic publishing, and the fact that the professional literature suggested a higher incidence of activity within North America, the study was extended to encompass publishing beyond the UK. This afforded a comparative context by which to view UK initiatives.

The project focused on publications used in tertiary education or for research, and 'electronic publishing' was taken to mean texts made available in any computer-mediated format: diskette, CD-ROM or via the Internet.

A range of methodological approaches was employed in conducting the research. These included a comprehensive literature search and review; a survey of publishers of electronic monographs by means of an interrogation of their Web sites, and case studies were also conducted with selected UK publishers. A separate investigation of the publishers of national bibliographical sources and services was also undertaken using telephone interviews, and UK university libraries were surveyed by means of an email questionnaire.

The project explored several interrelated areas. The nature of the general publishing context of scholarly monographs and textbooks was investigated to ascertain the current status of academic book publishing. The study offers a description of the structure of electronic monograph publishing, addressing such issues as incidence of provision, management structures, costing mechanisms, authoring and editorial responsibilities. An analysis of the issues associated with the characteristics of CD-ROM and Web monographs is provided, together with a delineation of the nature of narrative content, added value components, subject orientations, rights issues and quality control. File formats, document authority and identification, publication security and metadata are considered for both CD-ROM and Web monographs.

The project explored the implications of electronic monograph publishing for those involved in collection management, and provides an analysis of the current nature of bibliographic access and delivery. A cursory investigation into the provision of monographs in university libraries complemented that analysis, and was conceived as the precursor for a further in-depth study.

The findings of this report are extensive and complex. They suggest that UK electronic monograph publishing is embryonic, but alert to the salient issues. The structure of the industry reflects to some degree international initiatives yet displays unique characteristics. Extensive bibliographical problems remain, especially for Web monographs, and there is little evidence of collection management activity associated with electronic monographs in university libraries. A set of thirteen recommendations delineates areas that require further investigation, together with suggestions for enhancing awareness about the central issues identified in the research. A major conclusion concerns the need to establish a national forum to debate these issues and to foster electronic monograph publishing.

ABSTRACT

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# 1. INTRODUCTION

## 1.1    Background

Lancaster has been looking forward to paperless scholarly communication since 1976 but more recently the term "virtual library" has been coined, and we can begin to conceive of a new library-concept within not too many generations. Lancaster (1994) has also speculated on what will be meant by collection development by the year 2025, and has cited Dowlin who wrote of the need to move the library from a "fortress" model to an "information pipeline" model. Management of the *electronic* library encompasses the control of the traditional physical representations of knowledge and equally the location and delivery of electronic para-documents. Bibliographic control must extend its remit, and collection management must no longer centre on a locate-acquire-store-catalogue model but must move towards one which targets discover-access-facilitate (D-A-F) – although we must not forget a responsibility for maintaining or stabilising a collection against future needs (Atkinson, 1990 356). Toni Carbo (1997 56) has also noted that we need to learn to manage "new documents that are fundamentally different from those we have managed in the past" and has suggested a more user-centric approach. Libraries have moved from mass storage of resources ("Just in Case" services) to provide information when it is needed no matter where it is stored ("Just in Time" services), and are likely to move towards services customised for each individual user – a "Just for You" service. The Internet, information technology and a D-A-F approach make it possible; only library managers can make this trend happen. In examining the place of the electronic scholarly monograph within this scenario, this report wishes to emphasise possibilities for the future library user.

Within the context of today's electronic library and the increasing use made of the Internet and the World Wide Web for day-to-day research and work in libraries and information units, there is still surprisingly little reliance on digital originals. While many aspects of collection management can be aided or facilitated by means of the Internet, all libraries and information units currently depend on the printed page for their stock in trade, and the mindset remains rooted in the paper book or journal. Four years ago, Intner (1994 72) noted that libraries should handle "nonbooks" because people want them, and "certain formats have attributes that make them especially useful for libraries". If libraries have been considering non-bibliocentric collections for so long, publishers must rise to the challenge.

Where electronic documents are available, they are normally journals, with a high percentage of these being facsimiles of paper originals. This seems to be due partly to the absence of suitable electronic material and partly to a lack of "confidence" in the medium. The absence of suitable tools with which to store, manipulate, and view such documents, the technical issues surrounding access or payment and the philosophical and legal issues relating to usage rights, copyright, authority/validity and trust must not be forgotten. Most publishers, libraries and library suppliers maintain a presence on the Web but the use to which their pages are put varies considerably at this stage.

It is evident from the literature and from the International Publishers Association survey, in particular, that scant attention has been paid to the publishing of electronic monographs (Müller, 1997). The survey included a number of comments which reflected this: "As the publishing of scholarly material in electronic form is such a new field, I do not believe that it is appropriate for a trade association…", and

"...the main reason people didn't fill out [the questionnaire] was that it was t o o early [ in terms of their plans for electronic monograph publishing]".

While very little work relating to electronic monographs and textbooks *per se* has been undertaken, other forms of electronic publishing have been the subjects of investigation. In particular, the eLib projects such as Eurotext, SCOPE and EDBANK have looked at on-demand publishing and offer substantial insights into the problems of creating and using electronic texts.

Electronic journal publishing has received consideration both within the eLib programme (for example, The Electronic Journal and Learned Societies or the Open Journal Framework: Integrating Electronic Journals with Networked Information Resources) and elsewhere. For a number of years electronic scholarly publishing has been synonymous with electronic journal publishing. Treloar (1996 135), for example, prefaces his article with the comment that, "for the purposes of this article scholarly publishing will be taken to mean the production of journal articles". New electronic journals are being announced at the rate of twenty to thirty per week and about 30% of these fall into a broadly scholarly category. However, with the exception of texts added to electronic archives such as Project Gutenburg, the Oxford Text Archive, or Project Bartleby, relatively few monographs are made available on the Internet. As was suggested in the call for this research, journals are more manageable and, by virtue of their serial nature, tend to attract a stable user population. This may be because articles tend to be of a more manageable size and journal issues can easily be divided into parts and so are more easily delivered. The periodical nature of journals means that larger investments can be made, in the expectation of longer-term return. There are clearly also the incentives of currency and convenient access. One hypothesis propounded in the literature is that in the move towards greater availability of full-text electronic resources, the dividing line between journals and monographs is likely to become increasingly blurred.

There is, in addition, considerable debate (see Section 3.1) relating to the future of scholarly monographs *per se* which gives impetus to this project. The significance of the electronic publishing of scholarly monographs to the future of scholarly publishing in general is also debated (DeLoughry, 1993 A17; Freeman, 1993 A44). DeLoughry notes that "officials at many [US] presses say electronic publishing makes economic sense as printing costs continue to rise, pushing the prices of books and journals beyond the reach of many libraries and scholars".

This is the context in which the aims of the research project as defined by the UKOLN terms of reference must be viewed. The research reported on here examines scholarly electronic publishing practice not only within the context of the electronic library but also within the field of collection management.

Central to collection management in all models are resource allocation, selection policies and procedures, selection criteria, selection sources and services, acquisitions/technical services, collection evaluation and review and co-operation between libraries. The provision and publishing of monographs in electronic formats impinges on all of these activities as well as on the provision of access to the library's resources.

## 1.2    Terms of reference

There has been some uncertainty as to the incidence of electronic publishing within the UK and this constituted the central focus of the study.

Given the hypothesis that the availability of electronic monographs has some particular advantages, the study examined the concept of the  monograph  in the context of electronic publishing. The advantages that were identified in the research call for proposals included the suggestion that information can be updated on a regular basis, without waiting for new editions. Textbooks often run to an unwieldy 500 pages and students may be forced to buy a complete volume, when only a small section is needed while network versions could enable the purchase of relevant sections only. Electronic textbooks additionally allow the inclusion of multimedia applications, providing invaluable teaching tools, such as video clips of clinical operations.

The specific terms of reference were wide-ranging and the research was asked to address as many as possible of the following elements:

1. The current extent of electronic publishing of scholarly monographs and textbooks
2. The market role of any growth in the foreseeable future
3. The means by which an electronic monograph can be identified, in a more fluid environment
4. Granularity
5. The likely nature of electronic books (for example: what happens to a book when hypertext is added? Does the book become less of a self-contained package and hence less easily marketable? Does the writing style need to change to take account of non-linearity of reading?)
6. The significance of the draft BICI standard for identifying book items and contributions
7. The business and pricing models for composites
8. The outcomes and impact of custom publishing initiatives (for example, Primis, eLib projects, Docutech)
9. How value may be added to existing print books through the electronic medium (for example, mounting tables of contents or first chapters on the Internet, etc as loss-leaders)
10. How value can be added to electronic works in more innovative ways (for example, reader participation and debates about issues raised)
11. The impact that electronic publishing of scholarly monographs and textbooks is likely to have on publishers and intermediary vendors, and on library services and end users. Is it likely that self-publishing of monographs will occur, or could there be an increasing role for university presses? Will this be in any sense a solution to the monograph publishing crisis?

## 1.3    Survey variables

The study set out to examine a range of publisher, bookseller and library supplier resources with a view to determining current practices, capabilities, charging mechanisms and formats. To this end the research covered a variety of different environments and used a framework of variables in order to reveal the existence of any differences in practices. The variables that most seem to warrant inclusion are as follows.

The range of resources examined included those that are available on:
- CD-ROM;
- diskette; and via
- the Internet.

Additionally, the range of resources included some from each of the following sources:
- university publishers;
- commercial publishers;
- specialist publishers (for example, professional bodies or university departments);
- booksellers;
- library suppliers; and
- authors (self-publication).

Resources were selected to include:
- both free and charged documents;
- complete, text-only documents;
- complete multimedia documents;
- hypertext documents;
- virtual documents formed by the integration of parts;
- partial documents available as introductions to texts that are either charged or in another medium;
- documents which have added value over their print counterparts; and
- both documents created for the electronic medium and those simply copied to it.

## 1.4    Working definitions

For the purposes of this research, the term "scholarly monograph" has been taken to mean a single learned work on a defined topic (or series of topics) "used for, or in the course of, tertiary education or research". "Textbook" is defined as a category of monograph having the prescribed purpose of teaching – a "manual of instruction". We do not consider that the term "single work" requires the work to be a discrete unit, wholly available/accessible at one time and in one place, or in a single format (for example, text). In so far as is possible we have limited the research to the above definition.

In undertaking the research it has become clear that the term "monograph" is variously understood by the professions, indeed some publishers have seen it as including encyclopaedia, for example. Another definition offered by a publishing house interpreted a "scholarly monograph" as "something that is at present invariably published in hardback only, by a single author, or an edited collection in a very specific subject area… They are research works for a relatively small number of specialist scholars. Occasionally, they may be subsequently published in paperback." The authors wish to emphasise that their more general definition forms the basis of this research.

The *Report of the Joint Information Systems Committee & Publishers Association Working Party on fair dealing in an electronic environment.* (1997) noted the absence of any formally recognised definition for "electronic publication"; therefore this report views it as applying to texts made available in any computer-mediated medium: diskette, CD-ROM or via the Internet, for example. We also concur with their interpretation that electronic publications may include "both publications created specifically in electronic format and publications originally created in paper format and then later transferred to electronic format under conditions of conformity with copyright law. "

This report uses the term "electronic monographs" as a generic term to include both scholarly monographs and textbooks. The term "Web monograph" has been used for electronic monographs published on the Internet.

## 1.5    Parameters

### 1.5.1  Terminology

Given the general nature of the above definitions and the limited nature of the study, it was thought advisable to impose certain parameters. Excluded from the study were monographs that were reference works (for example, encyclopaedia), reports, and textbooks that had a limited role as teaching materials (for example, open learning study guides). CAL and CAT software packages were also excluded although use of multimedia within, or to extend, monographs was not seen as converting a book into such a package.

The *electronic* preparation of *paper* monographs may for some publishers constitute a dimension of electronic publishing. Whilst we recognise that encoding such documents in SGML, for example, renders them easily transferable to electronic formats, this research excluded consideration of the electronic preparation of paper monographs.

### 1.5.2  Scope

Set as it is within the UK eLib Programme, the study concentrated on the electronic publishing of scholarly monographs and textbooks and their use within UK, and centred on UK publishers and academic libraries. The very nature of the Internet and electronic publishing means that such geographical confines are artificial, and the study was extended to included non-UK publishers with UK bases distributing in the UK. To achieve a degree of comparative understanding, a number of North American and European publishers' sites were also examined.

While electronic publishing has to be viewed as encompassing products on diskette and CD-ROM as well as those delivered over the Internet, this research has, to a large extent, concentrated on the latter. Few products exist on diskette, perhaps the best known being the Voyager Expanded Books from the Voyager Company of Santa Monica, California, which date from 1990. They are designed to work with HyperCard on a Macintosh platform and were one of the first examples of electronic texts. They were neither scholarly monographs nor textbooks, and in most cases, each diskette contained an electronic copy of a popular work of fiction. Both the literature surveyed by this report and discussions in the case studies tended to eliminate the diskette as a serious contender owing to its relatively small capacity. The Collected reports of the Electronic Publishing Working Group to the Australian Vice-Chancellors' Committee (AVCC, 1996) noted that some diskette products had not been successful, as they required the user to purchase software separately in order that they might read them. Whilst there may still be occasional products or titles where diskettes would be appropriate, the publishers Routledge noted that they mostly discounted them because of the superior capacity of the now universally available CD-ROM. Cambridge University Press, which used to publish some material on diskette, is now doing so less frequently as the CD-ROM becomes more prevalent.

### 1.5.3  End-users survey

Whilst acknowledging the importance of reviewing the needs and wishes of end users, the constraints of time imposed by this project did not allow the detailed study which it warrants. Accordingly, the project merely undertook a preliminary investigation to identify university libraries currently accessing and using electronic monographs, which constitutes the basis for a further, more comprehensive study. The project surveyed these institutions via the SCONUL list.

### 1.5.4  The report

The report is not structured along conventional lines with separate sections for the literature survey, the publisher survey, the end-user survey and the case studies, but has taken a thematic approach bringing material together under section headings such as the publishing process or the characteristics of electronic publishing. We believe that this has resulted in a more accessible and useful synthesis of the research.

## *1.6     Acknowledgements*

# 2. METHODOLOGY

## 2.1 General management of the project

The project was scheduled to begin on the 1st October 1997 and run for a three-month period to the 31st December 1997. The date of commencement was delayed for approximately ten days owing to the late processing of official documentation, and since the research coincided with the Christmas and New Year Bank holidays, an extension to the 31st January 1998 was requested and granted.

Five researchers were employed for the duration of the project in addition to the Senior Researcher and the Project Director. Regular weekly briefings were held to monitor progress in addition to ad hoc sessions. A small departmental advisory panel comprising staff currently engaged in related research initiatives was established. This panel comprised Michael Keen, Lucy Tedd (NewsAgent) and Alan Wheatley (MODELS). Their expertise was drawn on as and when appropriate during the planning and execution of the surveys.

For the most part no significant problems were experienced in conducting the research. Some difficulties were encountered in arranging interviews with publishers due, in part, to the project coinciding with their busy schedules before and after the Christmas and New Year periods.

To satisfy the terms of reference of the project several methodologies were employed for the collection and analysis of the data.

## 2.2 Literature search

A comprehensive literature search was undertaken using *Library and Information Science Abstracts*, *Library Literature,* Charles Bailey's bibliography on electronic publishing (Bailey, 1998), John Kennedy's unpublished bibliography *Education for collection management* (Kennedy, 1997), and *Dissertation Abstracts International* as the initial starting points. Monographs in the fields of electronic publishing and collection management were identified through a search of the LIBERTAS OPAC.

Charles Bailey's work is a major specialist source that is regularly updated and sets out to provide an "understanding of scholarly electronic publishing efforts on the Internet and other networks" (Bailey, 1998). Sections comprise Economic Issues, Electronic Books and Texts, Electronic Serials (excluded from the present study), General Works, Legal Issues, Library Issues, New Publishing Models and Publisher Issues. John Kennedy's bibliography was created as a result of a research project undertaken in the University of Wales Aberystwyth Department of Information and Library Studies and constitutes a valuable collection of citations about collection management. The bibliography is held in the Department.

These sources were complemented by bibliographic data obtained from a literature search of AltaVista, including a number of collection management Internet sites, and from a listing furnished by Martin

White of TFPL. Significant titles of grey literature and unpublished materials, in particular, were also identified following the examination of publishers' Web sites and interviews with individuals in the publishing trade. A not insubstantial number of items were identified as a result of serendipity.

Our bibliography lists all relevant publications identified during the literature search, although we have been selective in the use of the secondary sources to support our discussion in the report. Several conclusions can be drawn from the literature search. It confirmed our suspicion that there is a predominance of documentation on the publishing of electronic journals, and that there is a comparative dearth of publications on the publishing or use of electronic monographs, particularly in the UK. While Bailey's work shows a significant amount of existing research, this is largely US-based and is heavily oriented towards journals and serials.

The nature of the secondary sources is diffuse, and the bibliography of this report constitutes the most comprehensive statement on the electronic publishing of electronic monographs. The literature also reveals a strong bias towards writing by publishers engaged in the field. We discovered very few items that offered any form of consolidated discussion of the issues surrounding the publishing of electronic monographs *per se,* even from North America, and even fewer that explored the implications for libraries and end users.

To provide a context for our analysis of the primary data for the study, the report offers a synthesis of the secondary literature. It is, we believe, the most complete review on the subject to date.

## *2.3    Survey of publishers*

The experience of the International Association of Publishers (IAP) survey of electronic licensing data and electronic document delivery initiatives, which resulted in an extraordinarily low response rate (Müller, 1997), alerted us to the pitfalls of using of a postal questionnaire to collect data. The IAP survey noted that "publishers but also publishers associations often expressed the opinion that there are so many different projects and services that it would be very difficult to draft a questionnaire covering all the situations". Furthermore, a postal questionnaire does not permit the level of control that we required, especially for an area open to diverse interpretation.

To avoid the possibility of a low response rate, the decision was taken to survey publishers by means of a systematic interrogation of their Web sites. The Web sites of 304 UK and non-UK publishers were studied to ascertain the incidence of scholarly monograph and textbook publishing. Publishers were identified using a personal database which Chris Armstrong had constructed for Information Automation Limited as a basis for his work on the Bowker-Saur World Database project (Armstrong, 1993-97), and several standard directories of publishers. As no comprehensive guide to scholarly publishers exists, this constituted a time-consuming exercise.

Following this initial analysis, publishers were divided into four categories:

### 2.3.1  Non-scholarly monograph or non-textbook publishers

A group of 93 publishers was identified as publishing neither scholarly monographs nor textbooks and were eliminated from the study.

### 2.3.2  UK publishers of electronic scholarly monographs and textbooks

CD-ROM and Web monographs were located on, or advertised through, the Web sites of 23 UK publishers (listed in Appendix 1). The publishers' sites were subject to an initial analysis using a *pro forma* (Appendix 2). Following this analysis, a more detailed scrutiny was made of specific elements of individual Web monograph titles.

The limited time scale of the project meant that we had to focus our analysis on Web monographs that were immediately accessible; a small number of CD-ROM publications were reviewed but none was analysed in depth due to the difficulty of acquiring review copies in the short time available.

### 2.3.3 UK publishers of scholarly monographs and textbooks *not* engaged in electronic publishing

Fifty-seven publishers were identified in this group and are listed in Appendix 3. Telephone interviews were conducted with 42 of these publishers (74% of the population) to discover if they had plans to publish electronically, or to elicit the reasons why the publisher had decided not to publish electronically.

### 2.3.4 Non-UK publishers of electronic scholarly monographs and textbooks

Whilst the central aim of the project was to analyse the nature of electronic publishing in the UK, we felt that the electronic titles located on the non-UK publishers' Web sites should be also investigated to ascertain innovatory trends. The Web sites of 129 non-UK scholarly publishers were analysed and 45 were found to be actively publishing electronic monographs. Monographs were analysed using the *pro formas* cited (Appendix 2). The non-UK publishers comprised largely North American presses and a group that were categorised as international. These are listed in Appendix 4.

### 2.3.5 Analysis

The data collected from the two surveys outlined in 2.3.2 and 2.3.4 above were analysed using Microsoft Excel. Each researcher was asked to maintain a record of the strategies adopted and the difficulties encountered when searching and interrogating the sites.

## 2.4 Case studies of UK electronic publishers

The interrogation of publishers' Web sites imposes obvious constraints on the amount of data gleaned about the rationale underlying the publishing of electronic monographs. We had intended to complement the data from these surveys by conducting focus group interviews with publishers. It was soon evident that there were inherent problems with this, as publishers were reluctant to engage in group discussions, largely due to matters of confidentiality – mirroring the experience of John Cox from Carfax reported to the IAP (M∫ller 1997).

Given the constraints of time and resources of the project, the decision was taken to undertake a small set of case studies in order to facilitate the collection of illustrative data. This was prompted by a suggestion by Anna Hodson, publisher at Routledge, and afforded the opportunity to explore in greater detail some of the issues investigated in the surveys we had undertaken of the publishers' Web sites. These case studies also permitted a unique opportunity to explore additional issues associated with the terms of reference, in particular the rationale underlying the structure of electronic publishing.

A number of UK publishers was approached and four publishers active in the field of electronic publishing elected to participate in the case studies: Routledge, Cambridge University Press, John Wiley and Sons, and Chadwyck-Healey. These were chosen to reflect an array of different media and subject fields. It should be noted, however, that although Routledge do not publish electronic scholarly monographs and textbooks, they do produce "electronic teaching and learning tools" for students, for example, *Glacial Analysis for Physical Geography,* which approaches our definition of a textbook. The experience that they have in publishing these and large and small electronic reference works, corpora and journals made them an ideal subject for investigation. Similarly, Chadwyck-Healey was selected for their considerable experience and expertise in electronic publishing rather than as publishers of electronic monographs. Data collection was by means of structured interviews for which an interview *pro forma* was created and distributed in advance (Appendix 5). The publishers also provided primary and secondary source materials.

A fifth case study was undertaken by means of a telephone interview with Intellect Ltd in Exeter. The constraints of time did not permit a visit to this publisher, but since they constitute an interesting example of specialist small-scale electronic publishing associated with an academic institution, we felt that the case study would be rewarding.

## 2.5    Survey of bibliographic sources and services

The major British bodies concerned with the supply of bibliographic data about monographs were identified and telephoned to discover whether their services do now or were likely to accommodate electronic monographs. Of those contacted, three organisations are active, BookData, Whitaker and the British National Bibliography, and they agreed to be surveyed by means of structured telephone interviews using a *pro forma* set of questions distributed in advance (Appendix 6).

## 2.6    End-users survey

To facilitate the preliminary investigation of the incidence of provision of electronic monographs in libraries in tertiary education, a postal questionnaire was created (Appendix 7). A pilot was scrutinised by the directors of two university libraries and members of the departmental advisory panel, and following their suggestions modifications were made. The questionnaire was then distributed to 125 academic institutions by means of the SCONUL electronic discussion list. Excluded from this list were national libraries and non-tertiary educational institutions.

The initial response was low (c20%), and the questionnaire was re-distributed. This elicited a small additional response, but the return rate of 40% was still deemed to be disappointing. The decision was then taken to undertake a second follow-up by means of telephone interviews and this proved more successful, with a final response rate of 75 (60%). One of the major reasons for the difficulties we encountered in achieving a satisfactory return is associated with the problem of the distribution of questionnaires within individual institutions. In many libraries, responsibility for collection management, and collection management of electronic monographs in particular, lies not with one but with a number of staff. This predicament is exacerbated by decentralised library collections in some universities.

The data collected from the questionnaire were analysed using Microsoft Excel.

## 2.7    Use of data

As the Introduction indicates, the report offers a thematic presentation of the different studies undertaken. Data arising from the analyses of the surveys are integrated within the various sections of the report rather than in discrete sections.

A considerable amount of data was collected during the project. We are conscious that, given more time, a significant proportion could be used to furnish further analyses, for example, studies of the nature of electronic publishing within specific subject fields. This issue is discussed later in the report (Section 9).

# 3 PUBLISHING CONTEXT

## 3.1   General debate about the status and future of the scholarly monograph

There is a great deal of contradictory evidence in the literature about the demise of scholarly monograph publishing. Several converging trends are currently operating in North America which, one group of commentators argues, will lead to the decline of the scholarly monograph. Academic publishing, especially in the humanities and the social sciences, is influenced by declining university subsidies, the increasing specialisation of research and tightening library budgets (Winkler, 1997 A18; Freeman, 1996 147-150). The problem is especially acute in the fields of history, area studies, music and literary criticism, and it is no coincidence that it is mostly in these areas that publishers are exploring the potential of electronic formats.

Other observers in North America do not accept this premise, and argue that more academic books are being published than in the past, but that they are being published in different fields (Wissoker, 1997 B4-B5). Wissoker offers statistical evidence from the Association of American University Presses to support his contention that the growth of academic publishing has not declined but has been preserved. What may have changed, however, is the nature of the monograph.

The academic book publishing industry in the UK is deemed by the Publishers Association (PA) to have maintained a "relatively successful record in recent years" in terms of its growing sales (Publishers Association, 1997). Whilst the PA does not differentiate specifically between scholarly monographs and other academic publications, it notes that there has been a rapid growth in the output of academic books over the past ten years (1985-1995), from 25,000 new titles and new editions to 45,000 (Publishers Association, 1997 4). However, these statistics hide the fact that the average unit sales per title are now seriously reduced (the increase in titles is accounted for, in part, by the large increase in the *number* of titles being published in smaller runs), resulting ultimately in higher prices. This said, there is no suggestion that the scholarly monograph is moribund (despite declining sales within universities), and the PA, too, recognises that the academic book may be undergoing significant changes in form (Publishers Association, 1997).

The hypothesis proffered by Winkler (1997) and others in the North American literature that electronic publishing will prove the salvation of the scholarly monograph is not borne out by the UK literature, nor by the data collected in this study. Whilst monographs are destined to undergo an electronic transformation, something that is seen as inevitable by most commentators, this is a consequence of technological evolution. There is an inherent belief that the printed monograph is destined to survive as a partner to its electronic companion.

## 3.2   Dominance of the journal

Another issue which appears to have a significant bearing upon the direction in which the publishing of electronic monographs is moving is the belief that the demands from within academe are best served by the journal article and not the traditional monograph. Evidence from certain North American university presses points to a new development, the publishing of "rough drafts" of contributions online for feedback, and the publishing of research associated with a monograph before the book is completed.

One editor at Columbia University Press suggests, "Maybe we'll end up not with an electronic monograph but with something that's in between a journal article and a book … maybe we'll find that the word  final  no longer applies in scholarly publishing" (Winkler, 1997 A20). Atkinson (1993) offers an intriguing theory that electronic document structure is likely to metamorphose into what he terms "concentric stratification". The document will comprise connecting levels of information, each succeeding level would contain information in the previous level but would also provide greater degrees of substance and detail. The scholarly monograph would require an "extended context" (that is, more levels). In this sense, he perceives an erosion of the dichotomy between journal articles and monographs. The Committee on Institutional Co-operation project which was established to investigate and promote the electronic publishing of scholarly monographs is to experiment with possibilities of this kind (Creth, 1997).

The debate, like that on the future of academic publishing, is inconclusive, with many North American academic publishers arguing that the monograph possesses unique qualities which, for certain disciplines, cannot be replaced (Winkler, 1997).

Within the context of the UK, we found a similar ambivalence but little evidence to suggest that the electronic journal will usurp the monograph and textbook *per se*. What may occur is a change in the nature of the narrative structure of electronic monographs, which will possibly be more akin to that of the reference work with shorter, possibly non-linear structures. As yet there is little evidence in British monographs of concentric stratification or similar manifestations of non-linear narrative (an issue which receives fuller discussion in Section 4.3).

## 3.3   Dominance of the printed book

A perennial issue, which receives particular attention throughout the literature, is the dominance of the printed book as a preferred physical format for the scholarly monograph (Cummings *et al*, 1992; Humphreys, 1997 3). For some writers this is a phenomenon intrinsically associated with Western culture and thought, and the views of the North American writers cited were upheld by certain sectors of the UK academic publishing fraternity.

Implicit in the returns from those scholarly publishers who have elected *not* to publish electronically is the belief that the scholar or student is culturally conditioned to use the printed book and that this orientation will persevere (see Section 3.6 for further discussion).

The dominance of the book has influenced the nature and progress of electronic monograph publishing in the UK. Routledge acknowledge the longevity of conventional print publishing for textbooks and academic monographs. They also suggest that one of the reasons for their decision to publish in CD-ROM format (as opposed to Web monographs) is associated with the fact that the CD-ROM is closer in ethos to the book format. Other publishers have sympathy with this thesis.

## 3.4   Electronic publishing

To offer a context for our discussion of electronic monograph publishing, it will be useful to summarise the essential qualities of electronic documents in order to establish similarities and differences to print-on-paper publishing. Publishers can follow the book model when moving into electronic publishing or can understand that the new medium demands an entirely new model appropriate to its characteristics and/or peculiarities. Elsewhere in this report it is noted that the book model is perhaps more appropriate to CD-ROMs and less so to Web publishing but this generalisation may not take sufficient account of software that can render a CD-ROM down into a Web-like appearance.

### 3.4.1  Essential qualities

The essential qualities of electronic publishing (whether CD-ROM or Web) are mostly to do with the software, although the first and most obvious quality is that the document is viewed on a screen rather than on paper and thus hardware is required. If publishers use electronic media, it is an absolute requirement that the reader have a microcomputer capable of receiving and appropriately processing the data back into the monograph that has been transmitted. This has, in turn, several implications. If the publisher includes large image or sound files that require high bandwidth or memory some users will be unable to acquire or read the "complete text". Not all PCs have the latest version of the operating system, large amounts of available memory, a suitably fast modem or a CD-ROM drive. Additionally, it should be remembered that in some areas of the world electronic publishing may

simply equate to *no* publishing as the power, telecommunications or computing infrastructure are not sufficiently advanced. Even in technologically advanced countries, the non-academic user who must rely on a dial-up connection is disadvantaged in very real terms if lengthy monographs are Web published, as there will be a telecommunications charge over and above the cost of the book.

If the user ultimately wants a paper copy of the monograph, further costs (in both time and money) accrue. While the publisher saves the cost of paper, printing, binding and storage, the user has to print off a selection of files and will end up with an unbound and possibly badly formatted artefact. Not all users have colour printers or printers that are capable of reproducing images with any degree of quality.

Electronic monographs require something of their readers over and above the intellectual qualities required by print-on-paper monographs. Not only do they require a state of mind that accepts the new media's equivalence to the old but a tool with which to do the actual reading. Software is required to access, interrogate or view the raw data on a CD-ROM or to communicate with, and to search and view the Web site of, the publisher who uses Web publishing. In the former case, the software normally is supplied as a part of the package when the CD-ROM is purchased while in the latter, software becomes an issue, as the publisher must depend on the reader having a suitably equipped microcomputer. Many users still work with early versions of browsers which cannot handle the more advanced features (such as frames) of the more recent releases of HTML or the QuickTime or MPEG add-ons required to view video, for example.

Software on CD-ROM monographs can be designed to work in any way from sequentially displaying the data as text to mixing images and allowing searching and other navigational features by means of which the user can move around the document. Adobe Acrobat-like or WinFile-like, it may present the user with a map of the document beside a window containing the full text of the chapter currently being viewed. Web-published monographs viewed interactively (that is, online) will employ the user's browser software which allows simple sequential reading or browsing of the current page, or moving around the page using the mouse or keypad. The browser normally has a built in "Find" command that allows readers to locate particular words or phrases. It is a part of the functionality of the Web (or HTML) that hyperlinks within a page can be used to jump to other documents. These links are either intimately associated with the one being read (and stored on the same server), or related to it but stored on another computer, possibly in another country. It is this capability by which the Web is known and that is the great power of electronic monographs in this medium. Rather than simply replicating a paper document on the screen, the Web allows for a restructuring of existing documents to suite the medium or a totally new approach to monograph writing. Documents may also be downloaded from Web sites. As has been shown, these are likely to be in Adobe Acrobat PDF format. This software allows the replication of print pages with design features and formatting intact and an "overlay" of navigation and display tools that allow the user to move to any page, search for text, zoom on the text or images, etc.

One less desirable quality of the ephemeral electronic document is its ability to appear differently on different user's screens or printers. This may affect the visual impact or the clarity of the text resulting in user rejection or poor reviews; it also affects the more mundane aspects such as pagination. When citing references, as in the text of this report, it is customary to include a pagination, thus: (Armstrong and Lonsdale, 1996 13) – that is, page 13 of an article by the authors. Readers will have noticed that where Web documents have been referenced, no such pagination has been included. It would be meaningless to add a page as the actual number would depend on the settings and screensize of the browser window or the page settings of the printer. Often the smallest unit to which one may refer is a chapter. Adobe Acrobat representations clearly score here as they retain the original, author/publisher pagination, which will not vary with user software.

## 3.4.2  Advantages and Disadvantages

Possible advantages of electronic publishing must lie in the author's new-found ability to experiment with delivery and presentation modes and in the user's acquired ability to manipulate the delivered data. In the former category are multimedia or insertions that are non-textual and the ability to insert links, which concept should be extended to encompass the author's freedom to design a monograph to take full advantage of such non-sequential access. As authors evolve who are writing especially for the medium, we should begin to find that the concept of the monograph may evolve: monographs may become interactive or the concept of chapters may disappear in favour of a set of related but bifurcating links. This, in turn, introduces the questions of intellectual rigour and scholarship, and of peer review, tenure and *curriculum vitae* addressed in Section 4.3. Will the Research Assessment Exercise of the

future keep pace with these new forms of scholarship or will they be damned as lower, less intellectual and less-deserving publications?

Web publishing does not require the intervention of a publisher or a university press, and this too may reflect on the scholarly value of a monograph. That the value added by the publisher is often little understood was a point made by Sullivan (1997), while DeLoughry (1993 A18) noted that the peer review and editorial processes clearly add authority that would be lacking from self-published monographs. Whether this *should* be the case is open for debate but the current situation demands them. The opposite side of the coin, at least for non-academics, is that Web publishing does require space on a server. If this is purchased as part of a Web connection from an Information Service Provider, there must be worries as to its long-term availability. If the author owns the server, then there are the costs and maintenance to be considered. The university survey undertaken by this project revealed some degree of in-house publishing activity. It would have been intriguing to explore the views on added value of those academics currently engaged in what appears to be self-publishing.

Text and data delivered in electronic format offer the user an ability to make free with another's work not previously available without much tedious typing. Cut-and-paste rules the day in the Windows environment. While this is merely useful and time-saving to the scrupulous quoter, it is also a boon to the unscrupulous scorner of copyright, and the incidence of plagiarism in dissertations and theses has risen accordingly. The view that, as the text comes from the Internet, it is less likely to be recognised as plagiarism by the examiner is also significant (anecdotal, but within the experience of the research team). This is, of course, particularly apposite to textbooks.

At least in so far as Web publications are concerned, the ephemeral nature of the monograph has to be considered. This might affect, for example, views on the scholarly authority of such a document – if long-term storage or location cannot be easily guaranteed then future readers will be able to make little of references in citing documents. Some of these issues may be answered by DOI (for example, in relocating a file to a new server) and are discussed in Section 7.3.2, but the general worries with regard to the impermanence and instability of the monograph have yet to be addressed. At this point in time, too, the bibliographic tools to facilitate the locating of such electronic monographs have yet to be determined, and Section 8 of this report addresses this issue in more detail.

Finally, an oft-repeated comment about computer-read books must be repeated here: readers cannot curl up in bed or take to the bath with the book. Quite simply, reading from a computer screen is less convenient and flexible than the use of a conventional book. Palm tops and message pads may be considered as a viable alternative but memory, screen or connectivity considerations render these less attractive. It is in no way likely that this factor will influence negatively the transition to electronic scholarly monographs, but it may affect the way in which they are used or the prevalence of parallel paper publishing.

## 3.5 Electronic monograph publishing in the UK

Our study set out to elicit the amount of electronic monograph publishing in the UK. Since there is no indication in the literature as to the availability of electronic monograph titles, and there is a dearth of discussion surrounding the electronic monograph debate, generally, in the UK, it was difficult to formulate a hypothesis regarding the amount of publishing.

The International Publishers Association survey (Müller, 1997) indicated a low incidence of provision of electronic monographs internationally, but because of the paucity of data collected, this study also failed to offer an adequate hypothesis. Of the small and therefore unrepresentative number of questionnaires completed (33), 30 claimed to be offering "entire works subject to copyright" and four "entire works from the public domain". However, only eight implied that their aims might include the publication of monographs. Respondents' descriptions of the nature of the monographs under discussion were often ambiguous, and this also served to cast doubt on the validity of the returns.

Of the 80 UK publishers of scholarly monographs and textbooks identified in our study, 23 (28.75%) publish electronic monographs and 57 (71.25%) did not appear to. These bald statistics must be viewed with caution given the volatile nature of electronic publishing and the different interpretations of "scholarly monograph" which we encountered among publishers. The figures do suggest an encouraging level of activity, especially given the predominance of electronic journals.

Such statistics offer only part of the national picture, however. Following our telephone survey of scholarly publishers who did *not* list electronic monographs on their Web sites, we discovered that two presses, IEE Publishing and Information Services and the Society of Chemical Industry had recently launched new electronic titles. Eleven others are currently considering moving into the electronic publishing arena. These figures suggest a slightly healthier attitude than would have been first thought.

An analysis of the incidence of diskette, CD-ROM and Web monographs reveals that 61% of publishers produce CD-ROMs, 60.9% engage in the publishing of Web monographs and 26% of the sites mention diskette products. In most cases, diskettes were lone products or quasi-textbook material designed to complement printed textbooks. Whilst the fact that 60.9% of the publishers publish Web monographs appears to be a gratifying figure, further analysis reveals that only 8.7% of the sites included full monographs while 56.5% included only partial texts. This is in contrast to North American and international publishing trends which indicate a greater incidence of Web monographs publishing in general (83.3%), and of full monographs, in particular (42.1%).

The general statistics cited above do not, of course, reflect the *degree* of publishing activity within an individual press, and our study sought to ascertain the output of titles for both Web monographs and CD-ROMs.  Appendix 8 cites 11 complete-text Web monographs currently listed by two publishers: OUP and Process Press. Approximately 57 partial-text monographs are available from 14 publishers. Taken together this demonstrates a low level of output especially when compared with the Web monographs published by North American and international publishers (Appendix 9).

With respect to the CD-ROM, the preferred medium for monograph publishing, 65 titles were identified, although 15 of these emanate from just one publisher, McGraw-Hill. Section 4 explores in greater depth the structural nature of the publishing in these media, and further detailed analyses of the physical nature of CD-ROM and Web monographs are presented in Section 5.3.

## 3.6    Non-electronic publishers in the UK

The results of the telephone survey designed to elicit why some UK publishers of scholarly monographs had decided not to venture into the field of electronic publishing revealed an array of motives. Two of the most common reasons cited are associated with the inappropriateness of electronic media for scholarly publishing, reflecting the cultural dominance of the printed book discussed above. Publishers argue that their readers have a preference for the printed book, and that "electronic publishing would be unsuited to the age group of their readers" since many would not have attained the requisite level of computer literacy. Several publishers perceived themselves as "traditional academic publishers" working outside of the realms of technology. Another manifestation of the inappropriateness of electronic publishing in an academic context concerns an apparent lack of demand in certain subject fields, for example, the humanities.

One group of publishers is hesitant about moving into electronic publishing until they have a clearer idea about the potential market – the most common response of those who are currently considering the electronic publishing option.

A number of publishers cited reasons associated with the small-scale operation of their company that would not permit them to invest in electronic publishing. This is particularly interesting given the structure of electronic publishing described in Section 4.1.3.

Issues associated with the production and delivery of electronic formats, for example, copyright and legal issues, were mentioned by a few publishers but there is little evidence that they themselves are constrained by a lack of technological skills or knowledge.

# 4.    PUBLISHING PROCESS

## *4.1    Structure of the electronic monograph publishing trade*

The study sought to explore the structure of the electronic monograph publishing trade in the UK through data gleaned from our analysis of the literature and the publishers' survey.

### 4.1.1  University presses

The North American experience suggests that there is a variety of types of publisher who have elected to enter the electronic monograph arena. Predominant in the US are the university presses, many of whom have been led into experimenting with electronic monographs as a result of the fears about the future of the scholarly monograph elucidated above, that is, in order to make scholarly monograph publishing economically viable.

Our search suggests that in excess of 14 North American university presses are currently active in the field (Appendix 4). Furthermore, there is a widely held belief that, for electronic publishing of monographs to be successful and to reduce risks, it is necessary for publishers to establish partnerships to support research and production. An example is the Committee on Institutional Cooperation (CIC) which is an academic consortium of the Big Ten universities and the University of Chicago.

No such trend is evident in the UK. Only four university presses: Cambridge, Oxford, Exeter, and University College London (an imprint of Taylor & Francis) offer, or plan to offer, electronic monographs. These presses are working independently, and if co-operation does exist, it is on an informal basis.

### 4.1.2  Non-University commercial publishers

There appears to be a similar pattern of electronic publishing activity from within the non-university publishing sector. A range of North American and international commercial publishers was identified (Appendix 4). With respect to the UK, nine mainstream, commercial publishers and eight minor presses were listed reflecting a diversity of disciplines with a slight and expected bias towards the sciences (Appendix 1).

### 4.1.3  Specialist publishers

A final category comprises small-scale individual publishing initiatives, again evident both in North America and in the UK. This is typified by academics publishing monographs directly on the Web. The one British example is Process Press, established by a member of the academic staff in the Department of Psychology at the University of Sheffield. A set of his scholarly Web monographs has been published using the computing facilities of the University of Sheffield for the Web site.

One issue that we sought to explore in the survey of UK university libraries was evidence of this form of specialist electronic publishing of monographs by academics or departments within their own universities. Of the 76 returns, 29 libraries were uncertain as to publishing activity within the

institution. Whilst not unsurprising, given the potential implications of electronic publishing for academic libraries, this raises the question of the effectiveness of communication between academic departments and library staff responsible for the selection and acquisition of electronic resources.

Eight universities reported the publishing of monographs by departments for internal use and nine for external use. No further information was sought at this juncture since the aim of the survey was specifically to identify the incidence of provision with a view to undertaking a more detailed investigation of the provision and use within academic institutions. The returns, whilst modest, suggest a level of activity worthy of further investigation.

## 4.1.4  New publishing structure

Whilst individual publishing initiatives by large and small commercial publishing houses will continue, there is a body of opinion in the literature which suggests that for electronic publishing, in general, to succeed, an inevitable synergy will have to be effected between the various "actors" involved in the electronic publishing process. Oakley, Kueter and O'Hea, (1997) identify the actors as comprising the authors, publishers and information providers. This concept could be expanded, we believe, since the publisher portion of the information chain contains links between publishers and libraries, users-as-authors and publishers, users and libraries, and publishers and users-as-readers.

Carbo (1997) feels that partnerships between producers and users of information services are essential to define, teach, learn and acquire the knowledge and skills ("mediacy") needed to be successful in a networked environment. Such a synergy is already evident in some of the North American initiatives concerned with electronic journal publishing, for example, TULIP and Red Sage (Scovill, 1995 appendix E). The International Association of Publishers also makes reference to a number of electronic publishing projects in which other actors are involved, "among which [are] universities and software vendors" (MJller, 1997).

With reference to the publishing of electronic monographs, similar sentiments were expressed with the establishment of the CIC:

> "In the new electronic environment, we believe that the libraries and presses, together with computing and networking organisations of our institutions, must explore new symbiotic alliances that might better satisfy the needs of all concerned." (Creth, 1997 2).

Winkler (1997 A20) also notes that a range of new partnerships have been forged between presses and other bodies to support the publishing of electronic monographs.

Whilst co-operative ventures in the electronic publishing of journals have been established in the UK (for example, PILOT), there is no evidence that the "synergistic environment for cooperation" for the publishing of scholarly monographs envisaged by the CIC, or the authors of the EU publication, *The Future of Content,* is emerging in the UK. Statements supporting the advisability of establishing "virtual companies" have been made, however, by British multimedia publishers who perceive the need for publishers to work with software developers and designers (Arnfield, 1996 17).

Routledge emphasised that a substantial degree of collaboration exists between themselves and user groups, and pointed to informal rapport with other publishers in the field of electronic publishing. A group of publishers has formed a cross-publisher forum, Electronic Information Publishers (formerly, CD-ROM Standards and Practices Action Group) and the Publishers Association Electronic Publishers Forum has been established with a remit to enable:

> "members to keep abreast of the rapid development of multimedia and electronic publishing, notably through an extensive programme of forums and seminars, and provides regular opportunities to review technical, market, Governmental and legal developments in this exciting but difficult area of publishing" (Publishers Association).

The existence of such groups suggests that individual publishers are not working in isolation.

At present, insufficient momentum has been generated for players to engage in this "synergistic environment" for scholarly publications. Indeed, it may not yet be considered appropriate.

However, a number of salient questions is being posed both in the literature and by individuals surveyed in our study which suggest that greater cooperation would offer a useful mechanism for addressing issues such as where the archiving and the preservation of the scholarly tradition should occur. Scovill queries whether libraries and publishers should develop collaborative contracts by which publishers maintain an archive of their own electronic monographs (Scovill, 1995 14).

Whilst conscious of the embryonic state of electronic publishing in the UK, we feel that there is a case for bringing together representatives from the various sectors concerned with academic publishing to explore the feasibility of establishing a body to explore ways of fostering the electronic publishing of scholarly literature. Such a structure could well reflect that created by the Australian Vice-Chancellors' Committee which was set up with the remit to "clarify the main issues affecting – and inhibiting – electronic publishing" (AVCC, 1996).

## 4.2    Implications for costs

With respect to the cost implications of electronic publishing of monographs, the literature reveals ambivalence. There is a body of opinion that reflects the view of Shannon Davies who argues that electronic publishing is particularly cost effective for materials that are traditionally expensive to print, for example, art history and palaeontology (DeLoughry, 1993 A19). The conclusions of research into general electronic publishing in Europe point to the benefit to be derived from decreasing operational costs for early entrants into the arena (Andersen Consulting and Institute for Information Economy and New Media (IENM), Austria, [1996]).

Other commentators are less optimistic, suggesting that at this juncture it is too early to determine whether the new technologies will result in significant production cost savings (Cummings *et al,* 1992; Arnfield, 1996; Thatcher, 1997). As Cummings *et al* observe, a number of the primary costs have less to do with the medium than with the nature of the activity. For example, many of the costs associated with the highly labour-intensive editorial and peer review processes associated with scholarly monographs will remain while some costs associated with the actual production of the text can be reduced. Sowden (1997) notes that while distribution and storage costs are removed, these form only a small percentage of the total cost of book production. Again, Arnfield notes an important caveat that, for some publishers, major costs may be encountered in the text conversion process. However, it should be noted that some publishers, Routledge for example, already prepare their paper monographs electronically (for example, using SGML) while opting to deliver them in print form. For these publishers, a transition to electronic monograph publishing has already been started should they wish to take advantage of it, and the financial trauma suggested by Arnfield has already been faced.

The more sophisticated interactive multimedia will result in a leap in costs; if it involves the use of studios and actors, then there are *substantial* financial implications. For the smaller electronic publisher there may be significant hurdles for, as Nigel Ward observes, bankers are still nervous about investing in multimedia companies as the industry is still in its infancy (Arnfield, 1996 18).

The rights issue too has significant cost implications. There has been a marked escalation of the cost of licensing fees and royalties, and also in the labour-intensive complexity of the negotiations which may be involved (Arnfield, 1996).

The experience of Routledge suggests that it is too early to pronounce on the cost effectiveness of electronic publishing of monographs. Their initial experience of CD-ROM publishing revealed that there is no appreciable decrease in costs. Indeed, the nature of the electronic publishing process delineated below suggests that it may be more labour intensive. Wiley maintains that it is currently no less expensive to publish electronically than in hardcopy and in many instances the cost is higher. The Publishers Association (1997) indicates that the costs of creating added value may add substantially to the total costs incurred by the publisher.

A tentative conclusion that can be drawn is that for the more simplistic transfer of a printed monograph to an electronic form there may ultimately be savings. For the more sophisticated electronic monograph employing an array of added-value features, there is less certainty.

Discussions with the publishers interviewed suggested that none was aware of formal costing models for the publishing of electronic monographs. Although as Routledge pointed out, the concept of a model may be too grand a construct for something which publishers do all the time if they "know what

any given product requires in terms of data, functionality and market". This is an issue worthy of further investigation.

## 4.3 Authoring

Implicit in the literature, in the monographs surveyed and from comments taken from the interviews with publishers, is the suggestion that the electronic monograph places new demands on the author. There are few difficulties and implications for the author who is transferring the complete printed text directly onto the Web or CD-ROM. But if the monograph is to derive benefit from added-value components, there is the challenge of introducing new technological elements to enhance the conceptual currency of the text, a challenge that raises new dimensions in authorship.

There is a widely held view in the North American, European and Australian literature that authors have to be engaged in computer technology for their work to be accepted by publishers for electronic publication (AVCC, 1996; Mitchell, 1996; Oakley, Kueter and O'Hea, 1997).

However, the expertise required is associated not only with technical issues but also with the ability to translate the conceptual and pedagogical characteristics of the text into an appropriate electronic context. Mitchell (cited in AVCC, 1997) hints that the electronic monograph, unlike the printed equivalent, is predisposed to short narratives that are modular, classified and possibly non-linear. Thatcher (1997) discusses another manifestation of this as reflected in the work of Ross Atkinson who perceives a shift from a linear to a three-dimensional form. There are too few examples from British titles to support this conjecture, and those publishers interviewed were unable to contribute to this discussion. Some monographs discovered in the publisher survey, however, would appear to be adopting something approaching his three-dimensional concept particularly with regard to the third level, referential reading (a matter which receives further discussion in Section 6.2.4).

For the creation of the more sophisticated electronic monograph, it seems that the author will have to acquire a new repertoire of skills – narrative, technical and pedagogical. These are similar to the skills which commentators suggest will be required by those book publishers who are moving into the field of electronic publishing (Oakley, Kueter and O'Hea, 1997). These demands may well limit the output of electronic monographs until a greater base of appropriate computer literacy is established amongst scholarly authors. There was a widely held belief that the publisher would not have the time (or resources) to take on the full responsibility for adapting a print-based monograph, that a commission would not be accepted unless the author possessed the requisite skills.

Another issue associated with authorship which the study explored concerns the difficulty of attracting academics into electronic publishing because of a lack of institutional recognition and support with respect to tenure (AVCC, 1996; Sullivan, 1997). Evidence from the case studies suggests that the electronic media do not appear to cause particular concern for academic authors working in the UK. Provenance remains the critical factor, and the publishers suggested that since electronic monographs are subject to the same scrutiny and peer review as the print equivalents, there is no difficulty in commissioning authors. In this context, it is interesting to note the comments of Kraft (1997) who reflects on the possibility of a less-rigorous, hastier peer review in an electronic environment. The added value of the publisher's imprint remains an important factor for the author and reader alike, in contrast with the view expressed in Rohe's article on the publishing of electronic journals (1998).

## 4.4 Management process of electronic publishing

It is very difficult to discern any prevalent pattern in the management structures of electronic publishing. This is due in part to a dearth of writing on the subject, which is in turn a consequence of the embryonic state of the electronic publishing of monographs in the UK. Indeed, there was fundamental disagreement about the need for a separate electronic division within a publishing house. The publishers who participated in the case studies all adopted an integrated approach in the belief that there should be one form of delivery of data, and that all personnel need to have the requisite expertise to engage in electronic publishing. Another British publishing house holds a diametrically opposing view to this, but they declined to be interviewed as a part of our study, and we were unable to explore this issue further.

Discussions with some publishers suggest that the process of electronic publishing does not follow the comparatively linear procedures inherent in print publishing, that is to say, from the commissioning of

the text to the publication and marketing of the final product. Electronic publishing of monographs was less predictable and less linear, requiring much greater collaboration from representatives of all departments. Compared with print publishing it was also seen as being more resource intensive. There is little documentation on the nature of the publishing process and this is an area worthy of further investigation.

### 4.4.1 Editorial responsibilities

A major issue discussed in the literature and raised by our case study publishers concerned the new skills demanded of personnel engaged in electronic publishing. Oakley, Kueter and O'Hea (1997) suggested that all areas of the publishing house will possibly require new technical and conceptual skills, and the AVCC underlined the importance of editorial personnel developing these skills to support the authors of electronic monographs (AVCC, 1996). Routledge, amongst others, confirmed that the need to ensure a wide skill base is a major factor, and they offer both in-house and external training for staff.

### 4.4.2 Revision, monitoring and evaluation

Electronic monographs appear to be subject to the same degree of monitoring and evaluation by publishers as their printed equivalents, both in terms of provenance and post-production use.

Electronic publishing facilitates comparatively easy revision of the text for more conventional monographs. New dimensions in the revision of Web monographs were discerned, however, associated with added value. A number of titles included facilities for the reader to communicate corrections, additions, and suggestions directly to the author thus enabling the author to conduct a mode of continuous revision. Such links suggest that, for certain titles, there could be a subtle move away from the traditional responsibility for revision resting with both the author and publisher, to the author alone.

## *4.5 Conclusion*

We are cognisant of the work undertaken in the wider field of electronic publishing on behalf of the EU and have studied their pronouncements on commercial trends and market features (Andersen Consulting and Institute for Information Economy and New Media (IENM), Austria, [1996]; Consulting Trust). There is an incompatibility between their studies and our research which means that it is nigh impossible to extrapolate from the broader discussions and findings on electronic publishing in order to make comparisons with our work.

Given the broad scale of our project and the constraints of time, it was not possible to investigate the commercial market trends in electronic monograph publishing in the UK. This was compounded by several additional factors. There is a serious lack of specific data regarding the market and end-user requirements (that is, academic libraries, the domestic market for scholars and students) and the embryonic nature of electronic monograph publishing is such that publishers felt unable to pronounce on the way in which the market is likely to develop.

One of the few instances where comment can be made concerns the importance of electronic publishing. The report on electronic publishing produced for the EU by Andersen Consulting and Institute for Information Economy and New Media (IENM), Austria ([1996]) concludes that publishers who do not move into electronic publishing are likely to become redundant:

> "Electronic publishing is likely to become a strategic cornerstone for economic survival within the next 5 – 8 years. Players that make no effort to get involved will see the window of opportunity closing."

The evidence gleaned from our study of scholarly publishers who are not active within the electronic publishing arena (*see* Section 3.5) together with the ambivalence regarding costing mechanisms (*see* Section 4.2) suggest that the gloomy prognostication of that report may not be true for the publishers of electronic scholarly monographs.

# 5. Characteristics of Electronic Publishing Media

The study sought to identify trends with regard to the media adopted by publishers for electronic monographs. There is little evidence to justify the inclusion of diskettes in this discussion, and it consequently centres on CD-ROM and Web monographs (see Section 1.4.2).

## 5.1    CD-ROMs

### 5.1.1    General background to the medium

The literature is clear on the importance of CD-ROMs as a publishing medium both in general and for monographs (see, for example, AVCC (1996) and Webber's (1996) report on a talk by Klaus Saur which noted, *inter alia*, that the transition to CD-ROM had been slower than expected). The investment by both the publishers and the users, and the virtually automatic delivery of a CD-ROM drive as a part of any new microcomputer make this inevitable. Originally used to deliver databases and then public-domain software and images, their use rapidly spread to documentation delivery (for example by Microsoft, car manufacturers, aircraft manufacturers, etc). At the same time, the library-oriented concept of a database as being an essentially bibliographic collection of secondary data began to expand to encompass full-text documents (newspapers, magazines, etc) and other kinds of collections. Multimedia arrived and the edges to any definition of a CD-ROM database became blurred.

CD-ROMs became primary sources, and in a McLuhan-like way the medium itself became the object of interest. Librarians spoke of their CD-ROM collection rather than their database collection – with some justification, as it typically included encyclopaedia, newspapers, and art images as well as bibliographic databases.

Historical foundations notwithstanding, the physical presentation of a CD-ROM has certain clear advantages over the same product accessed online through a database vendor or electronically over the Internet. In-house use allows for easier control of budgets, a certainty of available access, and a physical artefact that does not present the cataloguing problems of other electronic formats (Barnes, 1997). From a wider perspective, CD-ROMs are more amenable to legal deposit. This is only true, however, in so far as we can assume the appropriate hardware existing at some undefined point in the future when an unfortunate user wishes to retrieve the CD-ROM. Legal deposit issues relating to electronic media have been dealt with in depth (Ratcliffe, 1998; British Library, 1997), and also receive further consideration here in Section 8.1.1, and similar debates about the acceptability of electronic formats for theses have been rehearsed in UK higher education circles.

### 5.1.2    CD-ROM monographs in the UK

Table 5-1 shows the markedly higher UK figure for CD-ROMs together with the nearly equal North American figures for Web complete text and CD-ROM monographs that demonstrate the established position of CD-ROMs over Web publishing at this point in time. The figures given against "ALL" include international, US and UK publishers.

| Respondents | CD-ROMs (%) | Complete Web texts |
| --- | --- | --- |

|  |  | (%) |
| --- | --- | --- |
| **ALL** | 54.17 | 30.56 |
| **UK** | 60.87 | 8.7 |
| **USA** | 47.37 | 42.1 |

Table 5-1: Publishers' use of Web and CD-ROM

The table indicates that CD-ROM is currently the preferred medium for UK publishers and holds many benefits which the market recognise and require. Much about CD-ROM publishing is different from conventional book publishing but many of the publishing principles have close parallels with books. It is not simply that the CD-ROM can contain an electronic equivalent of a print-on-paper book, complete with title page, contents, chapters, bibliography and index which offer readers an easy transition to screen-reading, but the physical presence means that a publisher's relationship with the library remains one in which the monograph is purchased, acquired, stored and, ultimately, replaced with new editions. There is no need for the publisher to develop a new transaction model or mechanism suited to the new medium. It is evident from the comments of Routledge amongst others, however, that some markets are beginning to perceive the necessity for Web monographs. Whilst Chadwyck-Healey is not an electronic monograph publisher, they do have a substantial major investment in the CD-ROM sector, and, for the last 18 months, they have been moving onto the Web in parallel with CD-ROM production.

Since markets are changing continually, and with the plethora of Web journals, it is likely that there will be an increase in Web monographs although the status of the CD-ROM will persist. Several of the scholarly publishers who are venturing into electronic publishing indicated that they would move directly into the Web market.

The immediacy of the Internet seems to require that the traditional book model be replaced by something that functions differently. As we suggested in Section 4.3, just as linear text gives way to a hypertext or a three-dimensional model, so the scholarly monograph will continue to develop to include elements of interaction and peer review, of user selection and partial purchase or user subscriptions, which require a constantly updated monograph.

CD-ROMs are likely to be the preferred medium for publishers who wish to facilitate particular approaches to the content by means of software. CD-ROMs have traditionally had their own software supplied with them. Without appropriate software the contents of even a simple bibliographic database are virtually impenetrable – either by reason of the quantity of data through which the user would need to wade in order to locate something useful, or by virtue of the file format in which the data are stored. Thus, as scholarly monographs are delivered on CD-ROMs, it is no innovation to supply software that allows manipulation, searching or esoteric display of the text. While software can be supplied over the Internet, and Java capabilities offer increased flexibility, the publisher cannot know or guarantee that users are able to make use of the sophistication being offered.

### 5.1.2.1 Interactive CD-ROMs

Publishers who wish to make the most of both worlds – the security of the CD-ROM and the currency of the Internet – can provide their CD-ROMs with the capability to link to their Web site when required to bring in more up-to-date material than that stored on the disc. This approach has been used outside of the scholarly monograph arena, in particular by business and financial information providers who may, for example, provide company reports on CD-ROMs with access to their home Web site to allow for more recent material to be added to the company profile being developed by a user.

## 5.2 Internet

### 5.2.1 General background to the medium

The literature shows a sense of movement towards Internet publishing although this is chiefly manifested by electronic journals. Hitchcock, Carr and Hall (1997) demonstrate the growth of electronic journals, "the market is hardly more than embryonic … and there are too many vested

interests to let it slow". The collected reports of the Electronic Publishing Working Group to the Australian Vice-Chancellors' Committee also note that the "momentum towards electronic publication is still increasing and scholarly authors and readers are beginning to explore some of the challenges posed by the electronic medium" (AVCC, 1996). There is a discernible move to Web monographs in the USA (as demonstrated by Mitchell (1996), for example). Both MIT and Columbia University Press, for example, are involved in Web publishing; the former with a major encyclopaedia and the latter in publishing research monographs (Winkler, 1997 pA20). Columbia is of particular interest in that they understand the possibility of the scholarly monograph transmogrifying into something different when published electronically. Winkler quotes their editor in chief as saying, "Maybe we'll end up not with an electronic monograph but with something that's in between a journal article and a book … maybe we'll find that the word  final  no longer applies in scholarly publishing".

Publishers clearly see the potential but they see journals as a safer introduction to the medium because the repeat nature of journal publishing "captures" readers and because subscriptions mean that users will be repeat visitors to the site. Another factor is that the periodical nature of journals means that larger investments can be made in the expectation of longer-term return. Journal literature may not need to be available on the site for such long periods – monographs have a "shelf" life measured in years while journals could be archived after months – and currency (linked with the "freshness" of the site) is easy to maintain. Journals and the immediacy of electronic communication are both linked with current, up-to-date information. The pricing and charging models are established and easier to move to the electronic publication.

## 5.2.2   Internet monographs in the UK

The UK publisher survey, however, demonstrated significantly more movement towards the use of the Internet for publishing than had been predicted in the literature. Table 5-2 shows that only 30.6% of all publisher sites examined (US, UK and international), offered complete scholarly monographs or textbooks online. However, the figures for publishers offering partial monographs to add value to their catalogues are relatively high given the general acknowledgement that in the UK, at least, publishers are only just tentatively moving into the field. The amount of added-value use correlates with arguments in the North American literature for Web monographs (Winkler, 1997; Boson Books). Partial texts and tables of contents lie only slightly below the ubiquitous abstract while sample pages and sample chapters featured in about a third of all sites. Curiously, significantly fewer UK sites offer tables of contents and sample pages.

|  | Publishers with Complete Texts (%) | Publishers with Partial Texts (%) | Publishers offering Tables of Contents (%) | Publishers offering Sample Chapter (%) | Publishers offering a Synopsis or Abstract (%) | Publishers offering Sample Pages (%) |
|---|---|---|---|---|---|---|
| **All** | 30.56 | 52.78 | 52.78 | 30.56 | 56.94 | 36.11 |
| **UK** | 8.70 | 56.52 | 30.43 | 30.43 | 47.83 | 21.74 |
| **USA** | 42.11 | 55.26 | 65.79 | 31.58 | 57.89 | 42.11 |

Table 5-2: Publishers' use of Web sites

As might be expected, the North American figures are generally higher than those for the UK. This is particularly marked and inexplicable for "publishers offering tables of contents" on the Web, and it is difficult to determine any underlying rationale for this and the fact that about half as many UK publishers as US offer sample pages. Further work could usefully be undertaken to discover the pedagogic value to users of these features. Research could look at whether sample chapters are read in isolation or whether they produce sales of the monograph; whether abstracts are used as complete surrogates, and the comparative values and use made of tables of contents, abstracts and samples from the work could also be explored.

## *5.3    Comparison of media*

At first sight, the general figures gleaned from the publishers' survey suggest that publishers who favour CD-ROMs do not use the Web and *vice versa.* A more detailed analysis of the data was

undertaken and revealed no marked division internationally between publishers' use of the two media, with 21 (30.88%) publishers using both, 18 (26.47%) using only CD-ROMs and 29 (42.65%) using only the Internet. The pattern of publishing in the UK closely resembles this distribution. These figures do not seem to show any ambivalence about a move to the Internet, although it should be noted that over three times as many US publishers are making complete monographs available in this medium while more UK than US publishers are using CD-ROMs (60.9% against 47.4%). This may be accounted for by the historical fact that US publishers and university presses have been actively experimenting with Web publishing for a much longer time (Winkler, 1997 A18).

It might be supposed that some subjects or disciplines have special properties which render them particularly appropriate to electronic publishing or even suggest specifically either CD-ROM or Web publishing. Medicine offers a number of CD-ROM products that centre on anatomical images (for example A.D.A.M. or Animated Dissection of Anatomy for Medicine) that can be manipulated, rotated and zoomed. Table 5-3 offers an analysis of subject orientation against medium for UK and international publishers. The table shows, however, that medicine has only a slight bias towards CD-ROM. Indeed, it is evident that there is no clear subject bias for either Web or CD-ROM publishing. Neither medium appears to have properties that make it particularly appropriate for publishers with a specific subject orientation.

|  | Publishers' perceived subject orientation | Publishes CD-ROMs | Publishes Complete Texts On Web |
|---|---|---|---|
| 1 | Medicine, Science, Technology | Yes | |
| 2 | Medicine, Science, Technology | Yes | |
| 3 | Physics | Yes | |
| 4 | Computing, Science, Technology, Engineering, Business | Yes | |
| 5 | Science | Yes | |
| 6 | Various | Yes | |
| 7 | Physics | | Yes |
| 8 | Medicine | Yes | |
| 9 | Medicine, Science, Technology | Yes | |
| 10 | Pharmacy & Related Healthcare | Yes | |
| 11 | Psychology | | Yes |
| 12 | Chemistry | Yes | |
| 13 | Medicine | Yes | |
| 14 | Sciences | Yes | |
| 15 | Legal, Tax Information | Yes | |
| 16 | Various | Yes | |
| 17 | Various | Yes | |
| 18 | Science, Technology, Medicine, Business, Professional | Yes | |
| 19 | Medicine, Health Sciences | Yes | |
| 20 | Various | Yes | |
| 21 | Scientific, Computing | Yes | Yes |
| 22 | Educational, Professional | Yes | |
| 23 | Ancient World Translations | Yes | Yes |
| 24 | Medicine | Yes | |
| 25 | Various | Yes | Yes |
| 26 | Philosophy, Religion, Life Sciences, Criminal Justice Etc. | Yes | |
| 27 | Literature, Classical Science | | Yes |
| 28 | Astronomy | Yes | |
| 29 | Scientific, Genetics, Biology | | Yes |

Table 5-3: Publisher's subject orientation against medium (… continued on next page)

| | Publishers' perceived subject orientation | Publishes CD-ROMs | Publishes Complete Texts On Web |
|---|---|---|---|
| 30 | Literature | | Yes |
| 31 | Various | Yes | |
| 32 | Sciences, Engineering, Medicine | | Yes |
| 33 | Computing | | Yes |
| 34 | Various | | Yes |
| 35 | Various | Yes | |
| 36 | Literature | Yes | |
| 37 | Various | | Yes |
| 38 | Literature, Science | Yes | |
| 39 | Various | Yes | |
| 40 | Humanities | Yes | |
| 41 | Business, Education | Yes | |
| 42 | Legal, Business | Yes | |
| 43 | Various | Yes | |
| 44 | Various | Yes | |
| 45 | Classics, Antique Books | | Yes |
| 46 | Medicine | Yes | Yes |
| 47 | Complete Shakespeare | | Yes |
| 48 | Early English & Norse Texts, American Verse | Yes | Yes |
| 49 | History | | Yes |
| 50 | Various | | Yes |
| 51 | Various | Yes | |
| 52 | Various | | Yes |
| 53 | No clear orientation | | Yes |

Table 5-3 (cont.): Publishers' subject orientation against medium

Chadwyck-Healey moved into CD-ROMs from microforms because they were comfortable with the medium, and they are now moving to parallel publishing on the Web. In the future, they may publish on the Web first with CD-ROMs as "spin-off" products. Chadwyck-Healey CD-ROM full-text products have always used SGML so that a move to HTML is relatively straightforward. Both Cambridge and Wiley have a mixture of both media using the most appropriate and cost-effective means for each title. John Wiley currently has no single tried and tested business model for electronic publishing on the Web and noted in their case study that they have not yet seen strong evidence of demand from the marketplace. Routledge concur with what Chadwyck-Healey and Wiley relate about the straightforward conversion of SGML to Web delivery as one of many justifications for using SGML, and the difficulty in identifying demand for Web-based materials.

In the UK, the most positive evidence of a need for electronic publishing is Intellect Ltd, which has produced monographs on the Web first with no intermediate CD-ROM publishing. It is interesting that the two latest entrants into scholarly electronic publishing, that is IEE Publishing and Information and the Society of Chemical Industry, have followed the avenue taken by Intellect and have moved directly to the Internet.

## 5.4 Conclusion

With respect to the UK, the evidence points to an established CD-ROM publishing base and user-base in the UK with some degree of ambivalence towards Web publishing. In the US, Web publishing appears to be more advanced. Further work needs to be undertaken to establish and evaluate the rationale lying behind UK publishers' reaction to the opportunities available on the Web.

# 6      Nature of content

## *6.1      Narrative content*

In examining the electronic scholarly monograph, it is necessary to consider how the intellectual content may be influenced by the medium. If the text is being written specifically for publication in this way, should the author change his or her style of writing; write at less length; use fewer illustrations (or more); cite fewer supporting references? A brief examination of Mitchell's work (1996) is instructive in as far as the body of the text varies little from the text in a print-on-paper book. Nielsen (1997) has demonstrated that people rarely read Web pages word by word but instead scan the text, picking out individual words and sentences. This suggests that fewer words and highlighting such as bullet points might constitute an appropriate style. Mitchell makes a similar point suggesting that print favours long narratives and certain kinds of reading while the electronic media are pre-disposed towards "modular, classified and indexed chunks of content as in encyclopedias and dictionaries". Are publishers and/or authors aware of this as they write?

Most scholarly authors can be assumed to write with their intended audience in mind, but is their readership less clearly defined if the monograph is made available electronically? It is certain that it will be read by at least some – both topic-relevant and casual readers – who would not have read a paper version, although it may still be argued, at the time of writing where access to the Internet is neither universal nor even comprehensive within the UK, that the reverse also holds true. The physical representation of the monograph either on CD-ROM or on the Web is likely to differ from any paper version. This might be manifest in the inclusion of links or by virtue of its division into smaller and more easily screen-handled discrete sub-sections. Both media allow the searching of the text for occurrences of given words or phrases but is this likely to influence the way the text is structured? The Web (and it is not uncommon for this to be a feature of software access in other media) is built around the hypertext, non-linear approach, and it may be supposed that authors of scholarly monographs might take advantage of this to *force* readers into a non-linear approach to their topic (Atkinson, 1993; AVCC, 1996).

Militating against these innovative approaches to communication in an area which is often supposed to be declining in favour of scholarly journals are both the printed-book mindset of many publishers and, as suggested in *The Future of Content* (Oakley, Kueter and O'Hea, 1997), the "existing systems and the additional work involved by every party in the value chain." We might speculate that some of the reasons for a shift to scholarly journals could lie in the shorter article length and the more visually-exciting design features (for example, sidebars, extracted text) often found in even the most scholarly of journals. Care must be exercised in this area as scholarly journals, too, have both print and electronic versions with varying design features. It is clearly difficult to move completely away from the concept of a "book" with all that this term implies, but Cambridge University Press are compiling an "asset management store" – a kind of jukebox from which users can select necessary components for a book:

"Just For You" publishing. The book will be totally fragmented and some parts may be published before the whole is ready, confirming some of the findings of Winkler (1997).

Whilst we are aware that publishers such as Routledge are considering the possible benefits to their customers of electronic delivery of monographs, to our knowledge there is no published British documentation which explores the *unique* qualities of *scholarly* monographs, and considers how or to what extent they warrant (or are benefited by) this electronic route.

## *6.2    Added value*

It is clearly possible, at the most basic or fundamental level, simply to transfer an ASCII text file onto a server and make it available over the Web – very much as the now largely superseded gopher sites used to work. Viewed on a browser this produces an acceptable, paragraphed text in a standard font and size. The browser adds some functionality in providing a means of moving up and down the text, searching for words or phrases and, in some cases, allowing a zoom or magnification so that the text appears in a larger, more easy-to-read form. Such an approach suffers by comparison both with the paper alternative and with the many commercial sites that offer sites replete with images, animated images, Java applets, and often video clips.

Whether the intention is to woo readers from paper to screen or simply to provide an electronic text that both reflects the good name of the publisher and is worthy of the author, visual acceptability is a requirement of any electronic version. As a minimum, the screen image should be at least as good as a paper page is (or would have been), and preferably has some degree of added value – Jensen (1996) notes that the paper design should not dictate the digital design.

Added value can either offer easier access and visual processing or an enhanced intellectual content. The features which offer added value and are necessary to maintain the presentation at a level which is comparable with, or better than, the book fall into the former category. The electronic linking to additional resources or the provision of moving images (for example, a rotating anatomical image) clearly are beyond the capabilities of the printed book and are truly added value.

## 6.2.1   Nature of added value components: Web

The publisher survey examined sites to determine the use and extent of added value. As a precursor, a list of typical components was compiled from analyses of the literature search and our initial exploration of Web sites. Twelve specific types of added value were identified and each site was tested for each capability/facility. The types were: Resource Links; Review Links; Editorial/Feedback; Links to Jobs Sites; Links to Journals; Exercises/Questions; Companion Web Sites; Author Links; Author Biographies; Bookshop Links; Links to Professors/Curricula or Educational Sites; and Simulations/Animations. These are described below.

**Resource Links**

> This term has been used generically to mean hypertext links from within the body of the web page either to other parts of the publisher's site or to external resources that are relevant to the text. As noted above external links mean overheads for the publisher both in creating and maintaining, as it is necessary "to combat link-rot by identifying and removing hot-links to sites that have died, shifted to new locations, or become irrelevant. (If this is not done, a site quickly loses its charm - like an untended garden.)." (Mitchell, 1996)

> Internal links may be made to resources supplied by the author and/or publisher, or to footnotes, endnotes and references. Scholarly monographs tend to contain references and notes and the elegant use of links within a document on the Web is a good example of adding value to a print equivalent. The Mitchell essay quoted from above is a case in point. A reference number within the body of the text can be clicked on causing the display of the relevant footnote or citation. This, in turn, has a hypertext link "Back to the text" which moves the reader directly back to the point in the text from which the reference was made. Conversely, references in a text examined on the Sweet and Maxwell site do not offer any means of returning to the referring text; here a paper volume would have the edge in added value in so far as a finger could be kept in the page to facilitate the return.

There are cases to be found where the reference made in a text is to another electronic text, and the owner of the site has decided that there is little point in creating an interim step to a list of references. Instead, the link moves the user directly to the new text or resource. There are several disadvantages to this approach. In order to achieve an easy return, the new document would have to be opened in a new browser window, and if the reference is to a point midway through the new text, there will be no easy way of locating the correct entry point.

### Review Links

In marketing terms, it is common practice to quote from favourable reviews within publishers' pamphlets. A similar practice has developed on the Internet where links can be made from the catalogue, or description of a work, to sites containing reviews. If a monograph is especially popular, the publishers themselves may maintain a collection of such reviews.

### Editorial Feedback

A practice more common in electronic journals, the ability to publish feedback, comments, peer review, etc. is ideally suited to the Internet. This may take the form of simply appending material sent to the publisher (see for example the lengthy response by Sam Saunders at the end of *Never mind the quality, check the badge-width!* in the Web version of *Ariadne* (McNab, Anagnostelis and Cooke, 1997)). It may take the form of a ListServe or online conference centre (as practised by MCB University Press, a journals-only publisher <URL http://www.mcb.co.uk/mcbhome.htm>). Routledge are exploring the use of e-mail lists to maintain contact with teachers. Blackwell includes a  Comments  button.

### Links to Employment Sites

In cases where a publisher specialises in a particular subject area, it may be practicable to maintain links to specialist employment agencies. There are literally hundreds of such agencies and services available on the Web. If the agency expects the site to be used by undergraduates or others likely to be especially interested in employment, such a link may be of particular value. McGraw-Hill has a vacancy section on its home page for British and European vacancies. Care needs to be exercised here to ensure that the link made is appropriate. For example, a British publisher of British-oriented material linking to an employment agency that turns out to have mostly North American job vacancies is not likely to prove especially helpful!

### Links to Journals

Again, particularly applicable to publishers in specialist areas, links made from the monograph or the catalogue to related journals – possibly from other publishers – expand the intellectual value of the site. Where the publisher also publishes electronic journals that cover the same topic as a monograph, such links can be especially useful, encouraging further debate and extended treatment of the topic through the journal.

### Exercises and Questions

Where the monographs are targeted at the education sector, ancillary material – possibly developed by the author of the work – can be especially useful to readers. Exercises can ensure that readers have understood the text and can help to reinforce the material. Prentice Hall, for example, has practice exercises and sample examination questions associated with a chapter of a book on chemistry. Both contain multi-choice questions and the former has a hint against each question; in each case, the completed form can be mailed to Prentice-Hall. Wiley and McGraw-Hill also have this facility.

### Companion Web Sites

Companion Web sites are developed by publishers as a resource, normally for particular a title. An example is found on the McGraw-Hill Web site. McConnell and Brue's *Economics* has companion areas including a "Professor's Zone" and "Student's Zone" each of which has extensive lists of references to external Internet resources such as the UK Office for National Statistics and Her Majesty's Treasury <URL http://www.trican.com/mcgraw-hill/mcconnell/authors.htm>.

### Author Links

Where authors maintain personal Web sites with *curricula vitae,* lists of publications and other relevant material, it may be useful to create a link from the monograph to the author. A grey area exists between companion Web sites and author links. This is demonstrated by the author link attached to the UCL Press monograph, *Modern Cosmological Observations and Problems* <URL http://www.tandf.co.uk/books/Physics/074840645X.htm>, by Gregory Bothun. This links to a site maintained by the author which contains figures, chapter notes, chapter updates and other ancillary materials <URL http://zebu.uoregon.edu/tandf.html>. Alternatively, an author link may take the form of a "mailto:" facility to allow readers an easy means of sending comments to the author. The Intellect Ltd Web site includes a means of sending comments to the author. Author Web sites tend to be more prevalent with fictional works.

### Author Biographies

If the publisher does not wish, or is not able, to link the monograph directly to the author's own pages, it is common practice to include biographical details of the author. Of course, this has always been the practice on printed publicity materials and book jackets: the Web simply allows greater flexibility and greater length. Once again, Intellect Ltd has a combination of links and biography.

### Bookshop Links

Particularly where it is not possible to purchase the books directly from the publisher, sites may create links to Internet bookshops such as Amazon.com or The Internet Bookshop. The University of Exeter Press connects to Blackwells.

### Links to Professors and Curricular Materials

It has already been shown that McGraw-Hill divide their linked resources into student and professor zones. In their case, this was used to separate different levels of resources. Where the monograph or textbook is associated with a particular course or module, the link may well include details of the course, associated readings and possibly even times when the academic member of staff is available for tutorials.

### Simulations/Animation

Technology and bandwidth have now moved on to a point at which it is possible to include video clips and animations within Web pages. Care has to be taken as the page developer should not assume this capability on the part of the reader's browser software, and needs to make alternative arrangements for those individuals with slow modems or lower-end PCs. Even top-end computers may not be set up for every type of video clip possible. It is also accepted in Web-page design practice that features which will slow down the retrieval of the page should not be included unless they have actual added value (that is, they should not be included for decoration only). For these reasons, such features are used relatively infrequently on publishers' Web sites.

## 6.2.1.1    Incidence

The UK publishers' survey was designed to ascertain the incidence of added value components. Table 6-1 shows that links to associated and relevant resources are the most popular means of adding value to a site, although this survey was not able to distinguish between internal and external links. Links to reviews, related journals and authors are all extensively used, while facilities to enable feedback from readers featured in over 21% of sites. Author biographies are present in over 17% of sites visited.

| Type of Added Value | UK Publishers (%) |
|---|---|
| Resource Links | 39.13 |
| Author Links | 30.43 |
| Review Links | 30.43 |
| Links to Journals | 21.74 |
| Editorial / Feedback | 21.74 |

| | |
|---|---|
| Author Biographies | 17.39 |
| Exercises / Questions | 13.04 |
| Bookshop Links | 8.70 |
| Links to Employment Sites | 8.70 |
| Simulation / Animation | 8.70 |
| Companion Web Sites | 4.35 |
| Links to Professor / Curricula | 4.35 |

Table 6-1: Use of added value by UK publishers

The project examined a range of publisher Web sites from both sides of the Atlantic, as well as a few international houses. The figures are broadly similar although it appears that UK publishers have a greater tendency to use links to journals and links to authors. Companion Web sites are more favoured in North America. Table 6-2 shows comparisons between all sites visited, UK sites and US sites. It should be noted that the divisions shown, for example between the different types of links, are somewhat artificial: companion web sites may, in fact, perform much the same functions as links to journals or links to resources.

| Type of Added Value | All (%) | UK (%) | USA (%) |
|---|---|---|---|
| Resource Links | 47.22 | 39.13 | 50.00 |
| Review Links | 25.00 | 30.43 | 18.42 |
| Editorial / Feedback | 20.83 | 21.74 | 21.05 |
| Author Links | 18.06 | 30.43 | 10.53 |
| Links to Journals | 15.28 | 21.74 | 7.89 |
| Author Biographies | 15.28 | 17.39 | 13.16 |
| Companion Web Sites | 13.89 | 4.35 | 15.79 |
| Simulation / Animation | 12.50 | 8.70 | 10.53 |
| Exercises / Questions | 11.11 | 13.04 | 7.89 |
| Links to Employment Sites | 8.33 | 8.70 | 5.26 |
| Bookshop Links | 6.94 | 8.70 | 5.26 |
| Links to Professor / Curricula | 2.78 | 4.35 | 0.00 |

Table 6-2: Comparison of use of value-added features

Although there is a lower incidence of British publishers engaging in the electronic publishing of electronic monographs, it is evident that those who do publish electronically appear to be using no fewer value-added components than do their American counterparts.

Probably the major limiting factor that has to be acknowledged (Routledge, for example, mentioned this) is the control of external links. Wiley also noted the overhead of costs for checking links and necessary continual maintenance, not merely that the links still work but that the material therein is still relevant and quality controlled. Costing models for those monographs without potential for future editions lead Wiley to question whether added-value features with ongoing costs work best, so far as the publisher is concerned, for "publications revised, say, every two years" and major works with an extended life.

## 6.2.2  Nature of added value components: CD-ROMs

Much of the discussion thus far in Section 6 has centred on the Web sites made available by publishers, and most discussions in the literature treat added value as a perceived benefit of *Internet* publications. However, publications on CD-ROM should not be considered simply as another means of delivering a paper book. The medium offers its own added value. Over the last eighteen months hybrid CD-ROMs, which contain a built-in means of linking to the Internet to obtain up-to-date information, have also become an increasingly popular option. Microsoft's *Encarta Encyclopedia* was among the first to take this route in order to provide additional information from their *Encarta* Web site. The Routledge CD-ROM, *Glacial Analysis: An Interactive Introduction* by Jane Hart and Kirk Martinez, is "an innovative, interactive learning CD-ROM with links to the Internet and full hypertext presentation". While this involves publishers in some added costs in providing the electronic text on disc *and* the Internet

support site, it offers dial-up users a cost effective approach whereby the lengthy text passages which would be expensive to download are available locally but currency is ensured by the Internet link.

By virtue of the physical delivery medium, CD-ROMs offer the publisher a more positive means of pre-coordinating the contents. Literary CD-ROMs typically include biographies, historical sketches, timelines, portraits and background illustrations, while drama CD-ROMs include acted scenes from the plays, and interviews with actors and directors. CD-ROMs concerned with music or composers can include scores in parallel with the sound track, notes on orchestration, and historical images. While hypertext and links on Web sites can offer similar, if less sophisticated compilations, there is much less likelihood that users will follow all the links. On the Web, the impact and cohesion of the whole are less obvious. There is no physical "binding" to create an entity, and the disparate parts can be less well integrated than on a CD-ROM where, for example, the software design may have allowed for parallel viewing and listening.

CD-ROMs have a particular advantage over the Internet as a medium in that they have the search and display software supplied with the monograph. The software can be tailored to suit both the text and the perceived needs of the readership whereas, to a large extent, Internet readers are currently dependent on generic browser or Acrobat software. Search facilities can be made more sophisticated, fields can be used to facilitate searching and display, and the display software can show images and text as required by the publisher.

Perhaps the most obvious form of CD-ROM added value over print (and the Internet) is the ability within such software to display multiple windows of text simultaneously. Translations, original manuscripts and thesauri or dictionaries can all be displayed, often with the ability to move interactively between windows. Such an approach has been used for various CD-ROM Bible editions and theological monographs, literary and classical texts. The software may, as in Chadwyck-Healey's *American Poetry Full-Text*, present the table of contents beside the full text allowing easy navigation between poems.

While sound and video can be included in Internet resources, their efficacy is dependent on the hardware and software of the user, something over which the Internet publisher can have no control. CD-ROMs, which conventionally specify and make public minimum configurations in their publicity, can make freer use of appropriate multimedia. The *English Poetry Plus* CD-ROM from Chadwyck-Healey includes a number of audio readings that greatly enhance the plain text for school children.

### 6.2.3  Advantages of added value

One of the major attractions which publishers perceive in the electronic publishing of scholarly monographs lies in the added value (AVCC, 1997; Boson Books). It has the potential to raise a publication above the ordinary (above the competition?) and above any print version. Further, it is a necessity if the electronic version is to succeed, and is intimately linked with the marketing and marketability of the product. As has been suggested, an electronic version without any added value would not be treated seriously and, despite the most learned of authors and provenance, might possibly fail to demonstrate its authority. The literature shows this as a strong motivating force (Freeman, 1993 A44; Secor and Schwarzer, 1996 10). The MIT author, Mitchell (1996) points out in his essay, "the hardback and online versions added value to the text [of his book, *City of Bits*] in different and complementary fashions." He also notes the advantages of publishing electronically, for example, while there are physical and practical limitations that restrict the number of endnotes and references possible in a printed book, no such constraints are apparent electronically:

> "Superficially, adding these links may just seem to be a more convenient way to provide endnote citations to related publications. But, on closer inspection, there are some important differences. One is the dynamism … print endnotes can only be updated, all at once, when there is a reprint or a new edition, but hot-links can be updated incrementally and at any time."

There is evidence from both the publisher survey analysis and the case studies that British publishers seem to concur with the importance of added value as expressed in the literature. Routledge, for example, believe that added value will have a significant effect on the use and acceptance of electronic monographs.

### 6.2.4  Constraints and issues

Multimedia and added value components do not come cheap – software has to be licensed or commissioned if it is supplied on the CD-ROM, and there are not inconsiderable costs in the mastering process. Very few publishers hold all the intellectual property rights that they need in order to add multimedia value to CD-ROMs or Web sites, as hard-copy rights do not necessarily confer equivalent electronic rights (Arnfield, 1996 16, 17). The opposing point of view is put by Shannon Davies, Science Editor at the University of Texas Press who argued that electronic formats are particularly cost-effective for publishing visual materials that are expensive to print (DeLoughry, 1993 A19). The complexities surrounding copyright and the need to involve a variety of actors in the electronic design and publishing process mean difficult decisions. Routledge noted the considerable difficulties surrounding rights issues, the potential pitfalls in not maintaining control over added value links and the financial burden of developing and maintaining resource links. This view has echoes in the Arnfield article (1996). Further studies could usefully examine the management and cost implications of publishing in both media.

There is surprisingly little discussion in the literature as to the pedagogical rationale underlying the development of Web sites containing links that move readers outside the current document. Two issues seem to need further study. When the links are to an external resource, does this move the reader away from the source never to return – the possible beginning of a chain of links each moving the user further away from the publisher? Should publishers worry at this "throwing the customer out of the shop" scenario? Do publishers already lessen the impact of such negative marketing by refusing to link to "opposition" sites even if this refusal might lessen the value of their own site?

Secondly, are lists to additional resources of any real value? Do they enhance the pedagogic nature of the document or are they simply a waste of time? For example, the pressures on student users of textbooks are such that there are natural constraints on the amount of additional readings they can manage or absorb. Lecturers are sufficiently aware of this, and sometimes only single chapters are included in reading lists. In this context, is it likely that resource links will be exploited?

The McGraw-Hill economics title mentioned above has 168 links in the professor zone (16 syllabi, 26 "teach links", 86 data sources, 28 publications, 10 simulations and 2 software) and a further 50 in the student zone. It is interesting to speculate on how many of these are followed by readers.

Further work is needed to determine the value and use of links made available within publishers' sites. It seems likely that there may be different patterns of use by readers of scholarly monographs on the Web and by visitors to the more general publisher information sites containing only catalogues and sample chapters.

## 6.3    Subject orientations

It might have been expected that there would be a prevalence of science, technology and medical publishers among those active on the Web. Whilst these groups are certainly making full use of electronic publishing, both the survey of publisher sites and the survey of users indicated a range of humanities and social science use (see Table 5-3). In their case study, Routledge felt that literature and the humanities were suited to their particular type of electronic publishing because in some senses text-based projects in the humanities may be more predictable in terms of user needs than, say, some social science products. The survey of university librarians asked which departments or disciplines were making use of electronic texts. Of those who were able to respond positively concerning their use of electronic monographs, 24% responded that all departments did so equally while 24% claimed that the department concerned with business, management and law used electronic monographs. Thirty-nine percent had noticed the humanities and social sciences departments making use of electronic texts and 33% quoted sciences, medicine and health sciences. These figures are not mutually exclusive.

Of the publishers whose sites were visited and that had special subject orientations, business, management and law accounted for nearly 14%; the humanities and social sciences for 30.5%; while science, medicine and health sciences made up 39% of the whole.

Both sets of figures show the same tendency towards equal coverage with no particular subject areas receiving exceptional use or activity.

## *6.4    Rights issues*

From the point of view of electronic publications, the major rights issues involved are those of copyright. Copyright may be said to be about commerce and the licensed rights to view or use an item, which are granted (normally) in return for a payment. They affect both the users/readers of electronic monographs and the publishers who must, in their turn, acquire rights to use not only the text but also any added-value components such as images or sound clips. A full discussion of intellectual rights issues as they affect publishers and librarians can be found in *Copyright and Intellectual Property Rights* (Oppenheim, 1998).

### 6.4.1  Publishers

From the point of view of the publishers, the acquisition of rights is probably less problematic in the area of scholarly monographs than in other areas of publishing which demand extensive added value in the form of multimedia images, clip art, sound clips, etc. Electronic monographs would not be expected to be so heavily dependent on third-party images but contracts with authors may need to be carefully scrutinised before works are transferred to an electronic format. Publishers may already own the licence rights to an image entitling them to print-on-paper reproduction but these rights are not automatically transferable to electronic media. The literature also points to more complicated issues such as the notion that repeated linking (on a single CD-ROM) to an image might require a licence fee for each link despite the single copy of the image stored (Arnfield, 1996 16).

Web publishing has its own particular issues, as the case of *Shetland Times* versus *Shetland News* demonstrates. One newspaper had made links to the other by copying the headlines from the other service onto its own Web site, and a lawsuit followed which was ultimately settled out of court. Our research has shown considerable use of links to external sites as a means of adding value. Publishers must be aware of how copyright issues can affect their Web sites and seek appropriate additional licenses for all material which is not either their own or their authors'.

British publishers would appear to recognise the intrinsic difficulties of copyright. Routledge, for example, now have electronic rights clauses in all book contracts and have a good working knowledge of electronic rights issues, although they noted that this is less likely to be the case with other parts of the intellectual property supply chain (for example, smaller publishers, authors, customers). Among other problematic issues they recognised the lack of case law. Of the 42 contacted publishers not currently involved in electronic publishing, several mentioned copyright as a factor in this decision.

### 6.4.2  Users

Users acquire limited rights to material when they purchase a book, and these are normally delineated somewhere in the front matter by a statement such as:

> "Copyright ♥ 1998 by C J Armstrong and R E Lonsdale
> All rights reserved. No portion of this book may be reproduced, by any process or technique, without express written consent of the publisher."

However, neither the statement nor the "♥" symbol confer any special privileges and they are not necessary in order to gain copyright protection. As Oppenheim (1988) notes, "in virtually every country of the world, copyright is an automatic right – you do not have to register with some central authority."

Electronically-published monographs present an extended set of issues. Is a copyright statement necessary in order to gain protection? (This question should be viewed in the context of documents distributed world-wide with very little control over access.) How or where should any copyright statement to be included? What legal validity has it? What does the statement cover? Can a user copy the material to a discrete file on his or her microcomputer? Can a second, back-up copy be made? Is copyright infringed by the automatic caching of the browser software?

Two of the sites visited included ownership statements in a "remark" line not viewed unless the source code for the page is examined, while others included an ownership element in the metadata – also not normally viewed by readers. Whether this adds protection (beyond the "automatic right") against illegal use of the material has to be open to debate at this time. The Dublin Core metadata standard has

express elements covering ownership but copyright statements may need to be on the visible part of the page.

The fact that users take delivery of the monograph in electronic format means that it is the work of easy minutes to cut-and-paste copyright-protected material into a new document with or without suitable acknowledgement. Publishers are aware that they must look at this temptation when they address copyright issues (Publishers Association, 1997 14). This gives rise to questions such as: how should fair use be defined and charged for (there are issues relating to site licensing and on-demand publishing here)? Can material be electronically protected from such illicit copying? The Publishers Association is already examining these issues and see the criteria for a successful copyright scheme as including payment for actual use and value, and full partnership of the user in implementing terms of agreement (Publishers Association, 1997 13-10).

## 6.4.3  Copyright initiatives

The previous sub-sections have raised a number of questions relating to copyright for electronic monographs; some of these may be addressed by current broad-based initiatives relating to electronic/digital copyright.

The ELINOR Project (Electronic Library INformation Online Retrieval) at the International Institute for Electronic Library Research (IIELR) at De Montfort University set out to "develop the electronic library in a teaching and learning environment". It currently has a model system containing over 120 complete published textbooks, as well as many other course materials, examination papers and journals. They note that "the achievement of this involved many hours of negotiation with publishers over matters of copyright and royalties". To simplify the negotiation process, a model licence agreement and a usage tracking system that enables control of printing and the payment of royalties to participating publishers were developed (*see also* under Charging mechanisms, Section 8.8).

There are two versions of the agreement:

* ELINOR Agreement with Printing Control which specifies limited printing (typically ten pages per document per day); and the
* ELINOR Agreement with Royalties, which is used by publishers wishing to charge print royalties.

The team has recently received an award to perform further development of copyright management software. A description of the project and the text of the model licence agreements are available on the Web (IIELR, 1997) while licensing issues are discussed in Collier and Ramsden's (1995) paper and the whole project is summarised in Ramsden *et al* (1998). The new Telematics for Libraries Controlled Access to Network Digital Libraries in Europe is to work on low-cost library management software for rights control and charging in order to offer access to electronic journals (CANDLE, 1998).

Recent developments which will be significant in terms of allowing access to electronic monographs also stem from the work of a Joint information Systems Committee (JISC) of the UK Higher Education Funding Councils/Publishers Association Working Party (JISC, 1998). The reports and papers which emanated from the working party included *Copyright clearance and digitisation in UK Higher Education* and a *Report of the Joint Information Systems Committee & Publishers Association Working Party On Fair Dealing in an Electronic Environment* as well as the proposed 'Model Licence' between UK Universities and Publishers (JISC, 1997). With respect to the latter, "the 'Standard Licensing Arrangements' working party was asked by the JISC and the Publishers Association to explore options for developing 'umbrella' licence models which individual publishers could employ. These generic tools were intended to cover different products and different types of use and would set out the more routine conditions of use, but leave a limited number of commercial issues (for example, price per access [again *see* Section 8.8], territory) to be added by different suppliers." Whilst the licence agreement will affect most immediately electronic journals, it is couched in general terms and could be adopted for the electronic scholarly monographs.

It is evident that there are problems not yet encountered by publishers as they are only on the threshold of electronic scholarly publishing. Added to this, the European Commission sees the need for harmonisation in this area and their December 1997 proposal suggests that further legislation is needed, among other reasons, to cover the new communication technologies which provide new possibilities for exploiting material over networks (European Union Commission DG XV, 1997a).

The issues relating to publishers' rights to include material may be less acute in the electronic-monographs sector but we believe that further work on copyright issues within this sector is needed. This could provide an opportunity to undertake a systematic investigation of publishers' motives and rights, and of users' expectations and requirements. A clearer understanding of the specific issues involved is needed if rights holders – authors, content owners, publishers and users – are to be treated fairly.

## 6.5    Quality control

The issues surrounding the evaluation and quality of data have been a concern of individuals – there has been significant publishing since the late 1980s (*see* for example, Large, 1989; Fox *et al,* 1994) – as well as professional bodies such as UKOLUG (the UK Online User Group), The Library Association and the Southern California Online User Group (SCOUG) (Basch 1990). More recently the EU have demonstrated their concern (Swindells, 1994; Information Market Observatory, 1995).

Penniman (1997) notes a trade-off between quality and speed that is evident with the emergence of the World Wide Web and calls for "enhancement of the emerging systems to include some of the screening and selection processes users have relied on in the past" – an approach which the authors of this report suggest in Section 7.3.2.

Quality control is generally seen as being a part of content management and thus the publisher's task (Oakley, Kueter and O'Hea, 1997), although clearly the authors are responsible for the intellectual rigour and authority of the content itself. Routledge see it as a collaborative issue with the publishers taking final responsibility, particularly in terms of the control of the content.

At the most basic level, a degree of concern for quality is manifest in the appointment of a Webmaster, a cost centre or a directorate with special responsibility for electronic publishing. Chadwyck-Healey, John Wiley and Cambridge University Press all have appointed a Webmaster although Wiley stated specifically that it is not the Webmaster's responsibility to look after quality control of the content – this is covered by normal peer review and copy-editing procedures. It is the Webmaster's responsibility to ensure that house rules are followed, that README files make sense, that links lead to correct locations, and that any software provided works in the appropriate way. Routledge, Cambridge and Chadwyck-Healey integrate the management into their existing management structures.

In terms of the quality of the data within the resource, that is the monograph, quality is most obviously indicated by the use of metadata. This is considered in detail in Section 7 but it is clear that use of metadata is spasmodic both across the publishers in the survey and within individual publisher sites. Quality criteria associated with content normally include authority, authenticity, currency, timeliness, consistency, coverage and scope; while additional considerations are linked with the presentation, visual acceptability and ease of use and navigation around the site. There have been a number of attempts to document evaluative procedures and quality criteria for Internet resources, probably the best are Tillman (1997) and Widener University's *Web Site Evaluation Checklists* (Widener University, 1996). The DESIRE project also documented *Selection Criteria for Quality Controlled Information Gateways* (Day, 1997). At present there is no means other than examination by which users can determine the degree of trust which can be placed in a resource – it may not even be clear who owns the resource or when it was last updated. There is not inconsiderable pressure within the information industry to apply some form of standards, accreditation or validation to resources. This is necessary as the Internet opens up a huge array of resources to untutored or unskilled end users who may not consider the possibility that the resource is less than perfect or that it should be subjected to some kind of evaluation before it is used. In the UK, a new collaboration between the Centre for Information Quality Management and The Library Association has resulted in the Information Quality Collaboration (IQC) which aims to promote metadata as a means of indicating or assuring a resource's quality status. It is hoped that information providers can be persuaded of the value of quality labelling their resources and that the owners of search engines and web crawlers will recognise the wisdom of increasing the relevance ranking for those resources that include metadata indexing and assurance. IQC have a Web site through which their activities can be monitored (IQC, 1998).

# 7.    Issues Associated with the Physical Medium

## 7.1    Introduction

Section 1.4.2 suggested that electronic publishing includes delivery on diskette, CD-ROM or online/Internet but that diskettes are now little used. Each medium has unique parameters, advantages and disadvantages associated with it. This section examines indications and trends associated with electronic delivery in general, and with optical publishing and networked publishing in particular. Diskettes are excluded from the discussion.

## 7.2    Electronic publishing

The issues to be examined relate to the physical manifestation of the electronic monograph in a particular medium (that is, of the content, not of the medium itself). Some issues such as the file format could reasonably be discussed across all media while others are only really relevant to one (for example, metadata on the Internet). In fact, as delivery of a text on CD-ROM normally includes the software necessary to access and view it supplied as a part of the package, actual raw data and file structure are likely to be less problematic from the user's point of view. Although most users will have a browser on their PC, some texts supplied over the Internet may not be immediately viewable without additional software or work.

### 7.2.1  General issues

To some extent the discussion in this section focuses on established *versus* emergent technology although, of course, the latter – the Internet – is rapidly becoming as established as CD-ROMs.

In general terms, CD-ROMs began as an distribution medium for conventional databases (such as ERIC, MEDLINE or LISA), and rapidly extended their remit to include encyclopaedia, image banks, term banks, collections of poetry, and texts such as the *Bible*, Dickens, Shakespeare, and children's stories. They have the advantage of physical presence, an artefact, which can be owned, catalogued and controlled, and they normally have an established pattern of updates. They are also usually self-contained: the data element has access and viewing mechanisms built into the supplied software. Against this, in the library context, they are easily damaged or lost if they have not been made available to users over a network that includes an optical server away from the public. Although there remains a surprising amount of discussion on networking and control of CD-ROMs in libraries, they are generally an accepted and established part of the library collection. In most cases CD-ROMs are used to provide access to bibliographic and full-text databases – only 35% of respondents in the survey of university libraries considered that they were providing monographs or textbooks in this medium.

The Internet in its most accessible form, the World Wide Web, offers access to a huge number of resources. The actual resource base is changing and growing daily and there is no single union catalogue or listing of what is available. A single search, repeated on a single search engine over a

number of days, invariably returns different answers while the same search conducted on different search engines is never likely to provide access to exactly the same set of resources. Both the recall and the precision vary hugely (Clarke and Willett, 1997). Additionally, it must be remembered that anyone can publish on the Internet and that resources that have been located do not always have an immediately obvious provenance, validity or authority. It is largely this unpredictability together with the difficulty of cataloguing resources which may have vanished (or at least changed their location) by the following day that tends to expose the limitations of the Internet.

### 7.2.1.1    Archival storage

Finally, the issue of longevity should be addressed (*see also* Section 8.1 on Legal Deposit). Long-term storage remains something of an unknown factor for both magnetic and optical media; given the largely uncontrolled nature of much of the Internet, the responsibility for archiving and continued access must rest squarely with the publishers or creators of electronic monographs. The Task Force on Archiving Digital Information set up by The Commission on Preservation and Access and the Research Libraries Group was charged specifically to "frame the key problems that need to be resolved for technology refreshing to be considered an acceptable approach to ensuring continuing access to electronic digital records indefinitely into the future", and reported in late 1995 (Preserving Digital Information, 1995). The Task Force found "data migration" (that is, the continuous moving of digital archives from outdated to state-of-the-art hardware) to be a richer and more fruitful concept for describing what is necessary to protect the integrity of the cultural record than "technology refreshing". They further suggest that, "given the analysis in this report and its findings, we expect the Commission and The Research Libraries Group to pursue these recommendations on a national and, where appropriate, an international front, and to generate dialogue, interaction and products that will advance the development of trusted systems for digital preservation". Both Hendley (1996) and DLM-Forum (1997) also deal in some depth with the physical issues surrounding storage.

## 7.3    Internet – World Wide Web

### 7.3.1   File formats

Documents can be presented as plain ASCII-standard text but this is unattractive to the user's eye and undermines the publisher's role. Treloar (1996 136) notes:

> "To begin with, published information needs to be produced and formatted in a way that scholars can use it. In all cases, the technology chosen places some constraints on what can be represented and how."

Print-and-paper-based documents offer multiple fonts and font sizes, systems of layout and design, images and, particularly in journals, sidebars and banner heads derived from text extracts. However, despite some innovative use of layout (as for example, in Oakley, Kueter and O'Hea, 1997), use is effectively limited to a vertical, sequential approach. Paper-based documents do not offer what has become *de rigueur* on the Web, a convenient means of jumping horizontally to related documents or even an easy means of moving to a reference or footnote at the end of a chapter and then back to the text. Print is also fixed at the point in time at which it was published. Documents presented electronically may well include facilities not possible in print but at the same time, their visual impact cannot be less than a print counterpart if they are to be accepted by the same user base.

As Hitchcock, Carr and Hall have noted in *Web journal publishing: a UK perspective* (1997), Hypertext Markup Language (HTML) is "the formatting language of the Web and Postscript is the *de facto* standard for printing copy from computer-generated pages", so formats based on these standards tend to dominate the Web. Not all browsers interpret HTML in exactly the same way, which means that the page the user sees may differ in layout from that intended by the publisher. Consequently, if precise formatting is required, another approach is necessary. Adobe's Acrobat PDF application develops page images from Postscript text with significant file compression and reduction in file sizes that have considerable relevance when documents have to be downloaded.

SGML, or the Standard Generalised Markup Language, is the preferred format for long-term electronic document storage that originally gave rise to HTML – a fixed version of the more general SGML. Of the journal publishers covered by the Hitchcock, Carr and Hall report, five use HTML (50 journals),

and a further five (72 current journals and around 1,100 announced) use SGML to create HTML pages on the fly . A further 19 publishers (1,050 journals) use Adobe Acrobat PDF format. While some other formats are possible, none featured significantly. A survey by the International Publishers Association in March 1997 reported that the most commonly used formats among the small sample of members responding were PDF (12), HTML (11) and SGML (10) (Müller, 1997). Other formats reported by respondents included Folio Views (9), Postscript (4), FAX (2), Tex/Latex (2), ASCII (1), Hyper-G (1), TIF (1) and Realpage 2.0 (1). The DLM-Forum *Guidelines* (1997) deal in depth with electronic formats.

It is difficult to be authoritative about Internet/Web procedures as they change so rapidly. Java is a case in point as is the provision of documents created interactively (that is, while the user/reader is online and apparently accessing the final document) from material stored in a database attached to a Web page. However, creators of Web resources must remain aware of their readers; if publishers wish to maximise their electronic resources and satisfy all potential readers, they have to remember that not all browsers in use can cope with the most recent HTML coding let alone Java or live video feeds. Indeed some computers in use are not fast enough to handle such resources.

Our project discovered just over 17% of international monograph publishers using PDF format with a further 4% using Zip or PKZip file compression. The remaining sites used HTML, some with the addition of Java applets. This broadly accords with the nature of use by the UK publisher subset and is in line with use by journal publishers as shown by the M∫ller report. Routledge acknowledge the importance of SGML/HTML for their electronic publishing (and also for data development of the monographs which are published in print form), as do Chadwyck-Healey.

## 7.3.2  Document authority and identification

Linked with intellectual property rights is the topic of document identification. Without a physical artefact, how are users to be sure that what they are reading is the original document as intended by its author, owner or publisher? Issues of authenticity and confidence are particularly important to users. Peter Graham (1992/3) has identified the possibility of three types of document change:

- accidental – loss of the final version and changes made during copying;
- well-intentioned – updates, restructuring, etc; and
- fraudulent – changes of one's own work to cover one's tracks or change evidence for a variety of reasons, or damage to the work of another.

In the context of preservation and legal deposit, Graham is also able to suggest three possible solutions for authentication:
- **encryption** (mathematical transformation of a document using an algorithm which requires a particular number as the basis for the encryption);
- **hashing** (establishes the uniqueness of a document by "assigning arbitrary values to each portion of a document, and thence upon the resulting computation of specific contentless values called 'hash totals' or hashes"); and
- **digital time stamping** (authenticates a document *and* its existence at a point in time by first hashing the document and then logging the hash on a time-stamping server).

More recently the issue has been taken up by the Association of American Publishers (AAP) and others (Risher, 1997). In 1994, the AAP Board of Directors formed an Enabling Technologies Committee to address problems of copyright protection on the Internet. They determined that while many different technologies were being developed, all would benefit from a standard method of identifying content. The Digital Object Identifier (DOI) was developed with help from R.R. Bowker and the Corporation for National Research Initiatives and initially demonstrated in February 1997. Put simply, the DOI acts as an intermediate lookup table in a hypertext link. The user clicks on a link and is taken to a directory to locate the current URL of, and information about, the requested document. It can thus act as an identifier, a routing system that insures persistence and reliability because it can be updated at a single point, and as an agent where the option to "buy", "subscribe" or "bill an account" can be signalled. An example taken from the Gallery page on the DOI web site demonstrates routing:

> "When the International Publishers Association began announcing its Fourth Annual Symposium on Copyright, people signing up were sent to the IPA site in Geneva. Now, as the

date draws near, registration has been switched to the Japan Book Publishers Association. Using the DOI, IPA made all this invisible to the user." (DOI, 1997)

The original work has spread to Europe where Academic Press, Elsevier Science, Springer-Verlag and Wiley among others are taking part. The AAP has set up the DOI Foundation, an international membership-based organisation responsible for the management and promotion of the DOI system; their Web site offers a full description of the DOI (DOI, 1997) as well as papers from a DOI conference in December 1997. The initiative is supported by the Information Identifier Committee (IIC), an organisation whose mission statement begins:

> "Publishers will engage in substantial commercial activity over electronic networks in the decade ahead. To facilitate this new aspect of publishing, works and parts of works which are bought, sold or accessed over digital networks must be identified according to an internationally accepted standard system. Such an identifier system will enable multiple applications such as the development of electronic copyright management systems, ordering and fulfilment, tracking, billing and payment schemes, bibliographic control and enforcement systems." (IIC, 1997)

Throughout our research, it was evident that monograph publishers (for example, Routledge) and the publishers of trade bibliographies recognised the significance of DOI, and they are currently exploring its implications and potential. Whitaker clearly support the DOI initiative as they have stated that probably the greatest stimulus for bibliographic control of Web monographs will be when ISBNs are subsumed by DOIs.

The final possibility (digital time stamping) suggested by Graham (1992/3), combined with the use of DOIs, seems to offer the publishing community a practical and secure route to document authority and identification.

Additional issues that should be recognised as particularly relevant to documents stored and made available over the Internet are listed by Treloar (1996 140-141) in *Electronic Scholarly Publishing and the World Wide Web*. The dynamic Web environment affects:

- document locations – which may change (this affects both the ease with which resources can be located and the accuracy of the links they contain);
- document invariance – the capability and need for continuous updating (*cf*. well-intentioned change, above) marks out electronic publishing as different from the paper-based model it emulates. There are implications here for legal deposit and the publication of record. Should documents exist in both fixed and a current versions?
- durability – this refers to the length of time that an item is available for communicative transactions (a definition borrowed from Kaufer and Carley, 1993). This is clearly an unknown for electronic publications whether they are or are not deposited or archived.

Given the present embryonic state of electronic monograph publishing, it has not been possible to pronounce on these issues. A more detailed investigation of electronic monograph publishers is ultimately required to establish the extent to which they are of significance for the monograph, and whether publishers to any substantial degree are addressing them. It should be noted, however, that the conclusions reached by the Task Force on Archiving Digital Information (Preserving Digital Information, 1995) accord closely with both the views of these authors and with the issues of document authority and identification (for example, digital time stamping) discussed above. Their main conclusions are quoted here in full:

1. The first line of defence against loss of valuable digital information rests with the creators, providers and owners of digital information.
2. Long-term preservation of digital information on a scale adequate for the demands of future research and scholarship will require a deep infrastructure capable of supporting a distributed system of digital archives.
3. A critical component of the digital archiving infrastructure is the existence of a sufficient number of trusted organisations capable of storing, migrating and providing access to digital collections.
4. A process of certification for digital archives is needed to create an overall climate of trust about the prospects of preserving digital information.

5. Certified digital archives must have the right and duty to exercise an aggressive rescue function as a fail-safe mechanism for preserving valuable digital information that is in jeopardy of destruction, neglect or abandonment by its current custodian.

### 7.3.2.1 *Publication security*

The impermanence and protean state of the electronic scholarly monograph has clear implications for its success; the print model for monograph publishing can less easily be transferred to the electronic media than can its journal counterpart. Scholarly authors require the authority, confidence, known durability, guaranteed access and general acceptance normally associated with the book; publishers of monographs – more so than those of journals – must find a mechanism to impart such a warrant to the medium. At least in part, this must centre on the ability to create an inviolable and secure publication-of-record for archival and research purposes.

## 7.3.3 Metadata

Metadata is data about data – normally data used to aid the identification, description and location of networked electronic resources (for full definition, *see* ADAM Consortium, 1997). Although some dictionary definitions for "*meta*" include "among" or "between", this aspect is not normally accepted as a part of the definition of *metadata*, although – particularly in Internet usage – it tends to mean data about data which are themselves stored within the body of the document or resource they describes. In HTML terms, metadata is located in the "<HEAD>" section of the page it describes.

There has been considerable discussion during 1996 and 1997 on the use of metadata (see, for example, Godby and Miller, 1996; Dempsey, 1996; UKOLN, 1996), and important work has been undertaken by the World Wide Web Consortium (W3C), and others, to formalise its use through the Dublin Core (Weibel and Miller, 1997; Weibel and Iannella, 1997). Yet very little use is made of it either in general or, as revealed through our research, by monograph publishers with Web sites. This seems to be entirely understandable given that, to date, not all search engines make use of supplied metadata and those that do also use indexing drawn from the body of the document (Web Developers Virtual Library, 1997). Cathro (1997) states that "the key purpose of metadata is to facilitate and improve the retrieval of information". However, until *all* search engines rigorously use metadata *and* rigorously differentiate between metadata-indexed documents and those found by free-text searches, users are left in a limbo where concepts such as precision and recall serve only to confuse. There are also few tools to automate the use or insertion of metadata into documents (Powell, 1997). There is thus considerable uncertainty as to the actual use and efficacy of metadata.

As important as the use of metadata for identification is its potential to provide ownership, authority and document identification/authenticity – general quality markers – but, to date, this has received relatively little coverage. Armstrong (1997) described one scheme for using metadata in this way in *Metadata, PICS and Quality*, and the idea has been taken up by a working group, the Information Quality Collaboration, that was set up by The Library Association and the Centre for Information Quality Management (CIQM).

One third of the publisher Web sites visited in our research used metadata to some extent; nearly twice as many based in the UK (43.5%) as in US (23.7%). These figures do not include sites with only a single, automatically inserted metadata line containing only the name and version of the Web page publisher software package used to create the page. The figures also exclude the two sites that did not use metadata but included a lengthy remark line containing copyright and ownership information. It is unclear to what end this was inserted or what legal significance it would have as it would not be visible to users unless they viewed the source text of the page. Cambridge University Press stated in their case study that author rights would be managed by logging them in metadata.

It should be noted that in every case where metadata was incorporated (about one third of the publisher sites visited), no standard pattern or style was used, and in no case was it used systematically on every page. The most common meta-fields to be included (other than ANSI character set) were descriptor and keywords, thus providing a brief "abstract", and a set of index terms for those search engines

programmed to examine metadata in addition to the text of the page. To date, it would seem that the primary use of metadata is to enhance page location.

No site visited consistently used metadata on every page. Arguably, *if metadata is only being used to enhance search engine performance*, use on only the home (or top-level) pages could be a correct approach but, in fact, the metadata was frequently found on random lower-level pages. Limiting metadata use to hierarchically significant pages could be appropriate as it would tend to mean that, when users are searching for pages, there would be a tendency for only the top page of the site to be located and users would thus "begin reading in the correct place". Against this, it should be noted that this pattern of use prevents individual books (with their own pages within the site) from being located by subject term searching.

Routledge, Cambridge University Press and John Wiley all use some degree of metadata, Wiley standardising on Dublin Core (although they look forward to a revised and extended Core).

Clearly if the quality markers suggested above are to be added to metadata, then there is a need for each page to contain its own information. Equally clear is the need for an (enforceable) standard for the inclusion of metadata that would enable search engines to function both efficiently and to a recognised pattern. It seems that the Dublin Core has not yet reached critical mass and that the majority of Web site publishers are unaware of it. While we recognise that there is no way of enforcing such a regime across the Internet, we submit that if all search engines adopted an approach which favoured metadata-enhanced sites, it seems likely that resource publishers would fall into line. Oakley, Kueter and O'Hea (1997 100) also argue the need for standards for meta-information. Efficient and cost-effective Internet navigation is highlighted as are ownership information, type of format and unique identifying schemes. They note that at present there is no standard to facilitate effective navigation in a distributed environment and that there is a need for substantial work "in coming up with a meta-language".

While this discussion deals with Internet resources, it should be noted that if metadata becomes an accepted tool for resource description and labelling, there seems to be no good reason why the practice should not migrate to other, older means of file or database access. Monographs on CD-ROMs could, for example, include their own metadata. CIQM has already worked to establish a Database Label (Armstrong, 1996). One of its problems lies in the physical separation of the Label from the online or CD-ROM database; if some form of metadata could be used to make the Label a part of the database it describes, users would have instant access to a quality assurance marker.

## *7.4 CD-ROMs*

The ensuing discussion on CD-ROMs covers the physical attributes of the contents rather than those of the medium itself. This report does not deal with standards for directory structures and file names or with the number of pits per centimetre or the material used as the disc base.

### 7.4.1 File formats

As in most cases the software needed to locate and view material is supplied as a part of the CD-ROM package, there is little need for the user to be concerned with file formats. The structure of the data remains invisible to the user and the formatting and layout of the data on screen or paper is a function of the software.

### 7.4.2 Document authority and identification

Due to the physical presentation of CD-ROMs and the inability of users to alter the data they contain, issues of document change and changing document locations (once the artefact is obtained, its location is effectively under the control of the purchaser) are not relevant here.

Document invariance – updating – remains an issue although, for monographs, it varies little from the paper-based model of new editions. There may still be implications for legal deposit.
Durability is still to some extent an unknown for CD-ROMs although it is supposed that they may last at least as long as documents printed on paper that is not acid-free (*circa* 100 years).

Whatever the durability of the medium, it must be remembered that in order to read the CD-ROM, computers and disc drives compatible with the original disc will be required, as will the software (if this is not held on the CD-ROM itself). Hendley (1996) has dealt this with in detail.

Whether CD-ROMs offer scholarly authors, in particular, the authority, confidence, known durability, guaranteed access and general acceptance invested in the printed book is unclear from the data collected in our survey. A survey of academics would need to be undertaken in order to determine author attitudes.

### 7.4.3  Document location/metadata

When they first became available, CD-ROMs were targeted at the same user base that had accessed the files they offered online. In removing the largely unknown costs associated with online searching they proved a popular medium and have gradually widened their coverage beyond these traditional databases. Largely because of this approach, they have been treated in much the same way by secondary sources, and TFPL (1998) and Gale (1998) have both produced print and electronic directories to online and CD-ROM databases. Even the Bowker-Saur *World Databases* series (Armstrong, 1993-1997) only included some Internet resources. These directories tend to provide fairly full descriptions of the databases and CD-ROMs, offering users sufficient information to enable a reasoned choice. Additionally, the CD-ROM is treated by its publishers in much the same way as monographs, and catalogues are produced describing the content, showing sample "pages" or records, demonstrating the versatility of the access software and generally advertising the product. The essential difference between the publicity and marketing chain for a CD-ROM product and the same product made available via the Internet lies in the relative wealth of secondary sources and print publicity available for the former. Internet resources have no such established directories and they rarely have publisher's leaflets associated with them. This means that they must control their own advertising, discovery and access through whatever means they have to ensure users are able to locate them. There are, of course, Web catalogues of Internet resources but these are not comprehensive, frequently lack intellectual rigour and often describe resources in terms that are less than helpful to those attempting to discover their content (Cooke, McNab and Anagnostelis, 1996). As users cannot access a CD-ROM until it has been purchased or leased, there is no need for metadata to help them locate it interactively. The decision to acquire is based on secondary sources (possibly with the help of an approval copy), and is not dependent on locating the disc through, or by means of, its contents.

# 8.    Access and Delivery

Access to electronic monographs is of critical import to librarians engaged in collection management and to the scholar and researcher, and comprises several dimensions. The first concerns bibliographic access to titles, a matter that has, paradoxically, received scant attention in the international and UK literature on electronic monographs. The question of bibliographic access to publications is one facet of a much wider debate about the bibliographic control of non-book material that has engaged the profession for the past twenty-five years. Our study sought to investigate the current position in the UK with respect to legal deposit and electronic monographs, and to assess the nature and effectiveness of national bibliographic sources and services in identifying and describing monograph titles.

The study also explored another dimension of access, namely the nature of charging mechanisms employed by publishers.

## 8.1    Legal deposit and the British National Bibliography

The issue of extending the law of legal deposit to non-book materials in the UK is well documented in the literature on bibliographic control (Ratcliffe, 1998). Following a number of attempts in the late 1970s and 1980s to facilitate control over these publications, a major impetus came in February 1997, when the Government published its long-awaited consultation paper, *Legal Deposit of Publications: a Consultation Paper* (DNH, 1997). Whilst the document is concerned to explore arrangements for printed materials, it affords an important opportunity for all concerned with the new technologies to re-evaluate the implications of extending legal deposit legislation to electronic formats which are currently excluded from the *British National Bibliography* (*BNB*). In considering the issues surrounding the possible extension of legal deposit to electronic formats, a distinction must be drawn between the two media.

### 8.1.1  CD-ROMs

CD-ROMs are defined in the consultation paper as "tangible electronic formats", and as we have noted in Section 3.5, they constitute a significant area of electronic publishing in the UK both in general terms and more specifically within the field of electronic monographs. Ratcliffe (1998) defines two uses of CD-ROM, those which reproduce "established printed works", and those that, "though tangibility fixed in

format, represent live or dynamic databases which are subject to updating". The CD-ROM monographs that have been scrutinised in this study largely comprise the former category. Ratcliffe argues that there is a case for extending deposit to this medium, since the cost of producing the necessary copies for the deposit libraries would be "marginal". His view is echoed in both the consultation paper and the British Library's own consultation paper *The Future of the National Bibliography* (*BNB*) (British Library, 1997). The latter suggests that a set of "subordinate supplements of the BNB" could be produced that might ultimately appear in electronic format – including one specifically for CD-ROMs. In the short-term, it is envisaged that such a publication might be based upon information from publishers or outsourcing of data. In the longer-term, there is the possibility of legal deposit being extended to the format.

### 8.1.2   Web monographs

In respect of extending legal deposit bibliographic control, Web monographs pose a much greater challenge. Both consultative papers cited above devote comparatively little space to the discussion of Internet publications and underline the extensive problematic issues "which must be resolved before any system of legal deposit could be introduced" (DNH, 1997). Only one European country, Norway, has legislated for the deposit of Internet publications, and as Ratcliffe wryly observes "that legislation leaves much unsaid" (Ratcliffe, 1998). These problematic issues are extensively analysed in Ratcliffe's excellent chapter. The conclusions drawn in the consultative paper about the extension of deposit to Internet publications, including Web monographs, are sensibly open-ended. They recommend that legislation should be constructed so as to facilitate ultimately the extension of deposit to on-line publications, but "at the present time no regulations should be drawn up to give immediate effect to this possibility" (DNH, 1997).

The response from the British Library was more assertive with respect to the need to extend any new legislation to online publications. The Library urges the Government to include enabling powers in any new primary legislation and if such enabling powers are not enacted:

> "on-line publications, which are likely to become the major form of scholarly publication in some subject areas in the near future, would not be eligible for deposit. Some countries (e.g. France and Germany) which have taken a piece-meal approach to the extension of legal deposit legislation recognise that they will need to take remedial action to change the legislation" (British Library 1998).

### 8.1.3   The future of legal deposit

Following responses to the Government's consultation paper, the Secretary of State for Culture, Media and Sport announced at the end of January 1998 that a working group would be established, chaired by Sir Anthony Kenny and comprising representatives of the British Library, Legal Deposit Libraries, The British Film Institute and publishing sectors, to consider ways of moving forward on the issue of legal deposit. The group has been asked:

- To advise on how an effective national arch