Library Trends, a quarterly thematic journal, focuses on current trends in all areas of library practice. Each issue addresses a single theme in depth, exploring topics of interest primarily to practicing librarians and information scientists and secondarily to educators and students.

Editors: Boyd Rayward and John Unsworth
Publications Committee: Kate McDonell, Boyd Rayward, John Unsworth, Marlo Welshons

© 2007 by The Board of Trustees of the University of Illinois. All rights reserved.

Library Trends (ISSN 0024-2594) is published quarterly—in Summer, Fall, Winter, and Spring—for the University of Illinois Graduate School of Library and Information Science (GSLIS) by The Johns Hopkins University Press, 2715 N. Charles Street, Baltimore, MD 21218-4363.

Permissions. No portion of Library Trends may be reproduced by any process or technique without the formal consent of the publisher. Copies for personal or internal use may be made on the condition that the copier pay a fee of $20 per page through the Copyright Clearance Center, 222 Rosewood Dr., Danvers, MA 01923, for copying beyond that permitted by Section 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. 0024-2594/07. Direct all other permissions requests to Permissions Manager, The Johns Hopkins University Press, 2715 N. Charles Street, Baltimore, MD 21218-4363, or visit www.press.jhu.edu/cgi-bin/permissions.cgi.

Subscriptions. Institutional rate per year is $120; individual rate is $75.00. Students with ID may subscribe for $45.00. For all subscriptions mailed outside the U.S.A., please add foreign shipping: $7.50 (Canada or Mexico); $15.80 (outside North America). Single copy rate (current or back issues) is $36.00 for institutions, $23.00 for individuals. If applicable, please add state taxes or GST. Proportion is required for shipment. All orders, address changes, and other business correspondence should be addressed to The Johns Hopkins University Press, Journals Division, P.O. Box 19966, Baltimore, MD 21211-0966 (USA); telephone (410) 516-6987, fax (410) 516-6988; email jrnlcirc@press.jhu.edu, or toll free 1-800-548-1784 (US and Canada only). Claims for replacement of missing issues must be received within three months of mailing (six months for foreign addresses). All notices of change of address should provide both the old and new address.

Periodicals postage paid at Baltimore, Maryland, and at additional mailing offices. POSTMASTER: Send address changes to Library Trends, The Johns Hopkins University Press, Journals Division, 2715 N. Charles Street, Baltimore, MD 21218-4363.


Procedures for Proposing and Guest Editing an Issue of Library Trends

We encourage our readers to submit ideas for future Library Trends' themes; issue topics are developed through recommendations from members of the Publications Committee and from reader suggestions. We also encourage readers to volunteer to be issue editors or to suggest others who may be willing to be issue editors.

The style and tone of the journal is formal rather than journalistic or popular. Library Trends reviews the literature, summarizes current practice and thinking, and evaluates new directions in library practice. Papers must represent original work. Extensive updates of previously published papers are acceptable, but revisions or adaptations of published work are not sought. Although Library Trends is not formally peer-reviewed, guest editors invite articles for submission, which are then critically reviewed by both the guest editor and journal editor. Unsolicited articles are not accepted.

An issue editor proposes the theme and scope of a new issue, draws up a list of prospective authors and article topics, and provides short annotations of each article’s scope or else gives a statement of philosophy guiding the issue’s development. Please send your ideas, inquiries, or prospectus to Library Trends, GSLIS Publications Office, 501 E. Daniel Street, Champaign, IL 61820-6211.
Library and Information Services for Visually Impaired People

Helen Brazier and David Owen
Issue Editors
Library and Information Services for Visually Impaired People

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>757</td>
</tr>
<tr>
<td>Helen Brazier and David Owen</td>
<td></td>
</tr>
<tr>
<td>A User’s Perspective</td>
<td>760</td>
</tr>
<tr>
<td>Gillian A. Burrington</td>
<td></td>
</tr>
<tr>
<td>The Opportunities and Challenges of the Digital Age:</td>
<td>767</td>
</tr>
<tr>
<td>A Blind User’s Perspective</td>
<td></td>
</tr>
<tr>
<td>Kevin Carey</td>
<td></td>
</tr>
<tr>
<td>An Overview of International Research into the Library and</td>
<td>785</td>
</tr>
<tr>
<td>Information Needs of Visually Impaired People</td>
<td></td>
</tr>
<tr>
<td>J. E. Davies</td>
<td></td>
</tr>
<tr>
<td>Serving the Blind and Physically Handicapped in the United States of</td>
<td>796</td>
</tr>
<tr>
<td>America</td>
<td></td>
</tr>
<tr>
<td>Frank Kurt Cylke, Michael M. Moodie, and Robert E. Fistick</td>
<td></td>
</tr>
<tr>
<td>Sharing a Vision to Improve Library Services for Visually Impaired</td>
<td>809</td>
</tr>
<tr>
<td>Impaired People in the United Kingdom</td>
<td></td>
</tr>
<tr>
<td>David Owen</td>
<td></td>
</tr>
<tr>
<td>Setting Up a Computerized Catalog and Distribution Database of</td>
<td>830</td>
</tr>
<tr>
<td>Alternative Format Materials for Blind and Visually Impaired</td>
<td></td>
</tr>
<tr>
<td>Persons in Nigeria</td>
<td></td>
</tr>
<tr>
<td>Morayo Ibironke Atinmo</td>
<td></td>
</tr>
<tr>
<td>Library and Resource Center Facilities for Visually and Print</td>
<td>847</td>
</tr>
<tr>
<td>Impaired People in Developing Countries</td>
<td></td>
</tr>
<tr>
<td>Richard N. Tucker</td>
<td></td>
</tr>
</tbody>
</table>
The Role and Activities of the IFLA Libraries for the Blind Section
Helen Brazier

Libraries for the Blind as Accessible Content Publishers:
Copyright and Related Issues
J. W. Roos

Resource Discovery: Catalogs, Cataloging and the User
Ann Chapman

The DAISY Standard: Entering the Global Virtual Library
Elsebeth Tank and Carsten Frederiksen

Web Accessibility
Peter Brophy and Jenny Craven

The Impact of the Integrated Digital Library System on the
CNIB Library
Margaret McGrory, Margaret Williams, Karen Taylor, and Barbara Freeze
Introduction

HELEN BRAZIER AND DAVID OWEN

The original intention of the editor of Library Trends was to publish an issue devoted to a worldwide review of library services for all disabled people. We realized that this would be a formidable challenge that we did not feel competent to address. In discussing the challenge, however, we came to the conclusion that there was sufficient breadth within our own field of knowledge—library services for visually impaired people—to offer to edit this issue. We are grateful to have been given this opportunity to address a wider international audience than is normally the case, and we hope it will inspire somebody to take up the challenge of proposing an issue dedicated to services for people with other disabilities.

Our intention in devising this issue was to demonstrate the variety of national models for the governance and organization of services for visually impaired people. We wished to provide a broad as possible international perspective ranging from the highly structured and coordinated United States model to the situation in underdeveloped countries in Africa and elsewhere in the world. We wanted to explore the challenges and opportunities that these libraries face in the digital age. We were keen to demonstrate how these library services have to face the same issues as mainstream libraries throughout the world, such as copyright restrictions and metadata standards, but need to address the special needs of their users as well. We believe it is important to demonstrate the extent of effective international cooperation in this field of library and information services. It was crucial that this not be a British dominated issue but rather provide a range of expertise and experience from contributors around the world. Lastly, we were determined that we should provide an opportunity for readers to learn of the insights and experiences of the most important people of all—the users of these library services.

Accordingly, we commence this issue with three articles from the per-
spective of users. Dr. Gillian Burrington provides a very personal and informative account of her experience as a senior lecturer in library and information studies who progressively lost her sight from middle age. In contrast, Kevin Carey, who was born blind and is not a librarian, challenges us to develop a new vision of the role of libraries and librarians even though he has never seen a library but is a regular user. We do not apologize that both authors are British because we knew they provide valuable personal insights of worldwide relevance. We are keen to provide an international perspective on users’ needs, however, and we believe Eric Davies’s article should stimulate further research into this most important research activity.

Our next theme is the range of national models in this field of librarianship. It is appropriate to begin with Kurt Cylke and colleagues’ account of the history and development of the federally funded National Library for Blind and Physically Handicapped People as a constituent part of the Library of Congress because we envy such enlightened support from national government. In contrast, David Owen’s paper demonstrates how services in the United Kingdom are an uncoordinated mix of public and charitable services that are not directly funded or led by national government. This typical British compromise reflects the different library histories and written and unwritten constitutions of these countries. By way of further contrast, Morayo Atinmo recounts her personal attempt to provide much needed leadership in this field of librarianship in her native Nigeria, whereas Dick Tucker has valiantly attempted to provide a worldwide perspective on library services for visually impaired people in underdeveloped countries. It is sobering to compare the opportunities afforded to blind children in the United States with those in the poorest African nations.

Those involved in service delivery to visually impaired people across the world are constantly reminded of such crucial matters by their participation in the activities of the International Federation of Library Association’s (IFLA) Libraries for the Blind Section, and its secretary, Helen Brazier, provides an overview of the section’s activities to improve these services around the world. Another major concern for all these libraries is copyright, and Johan Roos, the chair of the section, provides a comprehensive and highly readable account of the particular relevance of copyright regulations in enhancing or deterring improved provision for visually impaired people in individual countries and internationally. In contrast, the library profession itself can determine how best to improve resource discovery for visually impaired people, and Ann Chapman explores the special factors that need to be considered when attempting to organize content to make it accessible to them.

Our final theme is to demonstrate how modern information technology and the digital revolution impact as much, if not more, on these li-
libraries as mainstream libraries. Elsebeth Tank and Carsten Frederiksen provide an account of how this sector has worked tirelessly on an international cooperative project to develop the DAISY standard so that visually impaired people can have previously undreamt of access to content in an easily usable form. Peter Brophy and Jenny Craven outline international attempts to ensure that the Internet becomes fully accessible to visually impaired people and how we can ensure that the visually impaired benefit from Web-based library services both within and remotely, providing we all address some fundamental requirements. Finally, Margaret McGrory and her colleagues at the Canadian National Institute for the Blind Library demonstrate how they have completely reengineered their library to revolutionize their service to blind Canadians by making full use of the digital revolution.

It is inevitable that in attempting to provide an issue with contributors from different countries and continents we have encountered differences in terminology. We are conscious that Library Trends has an international readership and that disabled people in different countries have different conventions. For example, in the UK we always write “Braille,” whereas elsewhere it is written “braille.” In the UK we refer to “visually impaired people,” whereas “visually handicapped people” is often used in the United States. We decided that we would not edit the articles to conform with UK terminology but would respect national usage and rely on our readers to recognize variations from their own normal terms.

Finally, we wish to acknowledge the excellent support we have received from Maureen Bates and Diane Farline in preparing this issue.
A User’s Perspective

Gillian A. Burrington, OBE, PhD, FCLIP

ABSTRACT
This article is a personal account of the challenges faced by a library school lecturer who loses sight later in life. It illustrates the difficulties faced by visually impaired people in the United Kingdom in obtaining access to reading materials for work, educational, and leisure purposes. It also considers their future prospects.

Whenever I think about library services for visually impaired people in the United Kingdom (UK), I am always struck by how confusing they are. As a user I find the variety of sources can be problematic and sometimes frustrating. I am also conscious that despite the number of organizations providing books for visually impaired people, less than 5 percent of UK publications actually appear in Braille, audio, or large print. Of course I am immensely grateful for the material that comes my way even though there is a considerably smaller range of nonfiction than I would like, and I seldom have a recently published book at the time other people are talking about it. I know from talking to other visually impaired people, especially those who have had sight and lost it, that my feelings are not unique and that many of those who can no longer read standard print often feel as I do, angry that unlike sighted people we have to rely to a very great extent on charities to meet our information and recreation reading needs despite our contributions to national and local taxes. Nevertheless, I am optimistic about the future.

Some personal information may help to set my views about library and information services for visually impaired people in context. I have been registered blind since 1987; I am a chartered librarian with an academic background in sociology, and I taught library and information studies for more than two decades. My views about library services for visually im-
paired people in the UK have clearly been shaped by my experience of sight loss. I am very aware that had I lost my sight only a few years later it would not have been necessary for me to take early retirement from teaching, but at that time synthetic speech and dictation software were yet to be developed. Additionally, while the Polytechnic where I worked had an excellent equal opportunities policy with respect to students, that policy did not at that time extend to meeting the needs of staff with disabilities. The concept of “reasonable adjustments” as elaborated in the Disability Discrimination Act of 1995 (DDA) was in 1989 alien to most employers, and the cost of any adjustments would not then have been deemed affordable. Also, while colleagues were individually sympathetic toward my difficulties, the idea of funds that could be spent on services to students being diverted to one member of staff would not, I am sure, have had much support.

The only help I was offered was someone to read to me for six hours a week. This might have been enough to keep me abreast with the reading I needed for preparing lectures, but the person the local authority would provide would know nothing about librarianship or sociology. What I really needed was someone who could quickly summarize the material so that I could then decide what I needed them to read aloud in detail. A research student would have been ideal, but the authority would not pay for this. Even if they had I would still have had the problem of needing to read handwritten essays and examination scripts. A CCTV magnifier, which was then very new technology, would have helped, but it was refused on the grounds that it was too expensive.

I therefore retired before the time came when all staff in the department had a desktop computer and students submitted their essays on disk. Had my sight loss been just that little bit later, I would have been able to read everything on the screen in large print until I needed the access technologies that now make using computers easier for visually impaired people.

There must be many other people who experience sight loss during their working lives and who want to continue having access to professional or academic literature and to information generated within their employing organization. The DDA and access technologies will undoubtedly have helped many, but I am still conscious that with the exception of the Royal National Institute of the Blind (RNIB) Student Library, which has been demand led rather than based on the concept of a balanced stock, relatively little academic and practically no professional literature is available in alternative formats in any of the libraries for the blind in the UK. I therefore look forward to a time when this situation can be addressed in a systematic way.

Following my early retirement I established a management training consultancy. Until I acquired my own scanner and Optical Character Rec-
ognition software I relied heavily on the aid of a good many helpful librarians plus a CCTV magnifier to read enough of the literature to produce a wide range of course materials. This experience also reinforces the view that I have always held: given good staff and equipment public libraries can provide the comprehensive service that the Public Libraries and Museums Act 1964 requires them to do rather than restricting, as so many do, visually impaired services to recreational materials. It is of course important that equipment is available, that staff are familiar with using this equipment, and that they have time available to help readers who have sight problems by finding the appropriate material, discussing the contents, and finding pages that the reader might wish to magnify or scan.

It has been my experience that professional associations can be enormously helpful to their visually impaired members and that they can equally create barriers to their having access to changes and developments in professional thinking and knowledge. I was heavily involved with the Library Association (now the Chartered Institute of Library and Information Professionals [CILIP]) from 1987 to 1998 and was its president in 1994. The Library Association was committed to equal opportunities, and all my papers were automatically sent to me in large print or on disk. Some years later I asked to receive the journal of our new institution in an accessible format. To my surprise I was told that this would not be possible. I made several suggestions as to how it could be done but these were all rejected by staff at the operational level. Only when I took the issue to the chief executive was it made plain that CILIP’s policy, the culture of the organization, and the spirit of the DDA meant that my needs had to be met. This clearly demonstrates that any equal opportunities policy is useless unless everyone in the organization is made aware of it. Equally important, people need to know what it is possible to do as well as knowing the organization’s legal responsibilities. I believe this applies as much to libraries as to any other professional association.

My current use of libraries combines a variety of resources to acquire my leisure and educational reading. Unfortunately, Braille is not among these resources because in common with many people who lose their sight later in life, lack of sensitivity in my fingers has meant I found learning this particular tactile format too difficult. I can read Moon adequately if rather slowly, but with only 300 titles available in the National Library for the Blind there is not a great deal of choice. I use a computer with synthetic speech output (Jaws) and dictation software (Dragon NaturallySpeaking). I download out-of-copyright nonfiction and some material from the Internet as text documents and use Jaws to listen; I have Eze Reader software for listening to books in DAISY format. For recreational reading I get cassettes from my local public library and from the Calibre Cassette Library. I usually get information I need either directly from the Internet or indirectly by using the National Library for the Blind Web site.
When I first registered as blind I was only told what my local public library could offer and about the RNIB Talking Book Service. I found the range of material that the RNIB made available was very good. However, the dedicated, nonstandard (transportable rather than portable) cassette player that had to be used was so seldom where I wanted to listen to the tapes that I read relatively few books each year. My local Social Services Department transferred the player to someone who would make greater use of the subscription.

Like many visually impaired people I like to visit my local public library where I can choose books for leisure reading that are available there and then rather than selecting from a catalog and using a postal delivery service. My local public library has a good selection of commercially produced standard audio cassettes and some CDs, and these satisfy a substantial portion of my recreational reading. However, I had been for several years bemoaning the fact that there were other books I would like to read before another blind person told me about the Calibre Cassette Library.

Like the cassettes in my local public library, Calibre uses open formats for its cassettes and CDs, which play on standard equipment. Calibre provides a much wider range of titles than can be provided by a public library because its books are recorded by volunteer actors. Their cassettes also have an advantage over the commercial ones in having additional information and a synopsis at the beginning of each book. There is also an excellent Web-based catalog that allows users to search by subject, author, title, and reader, so although I make relatively little use of the service at the moment I very much appreciate that it gives me wider choice and the ability to make my own selections.

Since I have no longer been able to read large print I have learned about other collections of audio books, but my learning has been haphazard and largely as a result of my formal role with the National Library for the Blind (NLB). But even if I were to register as a reader of every audio library, there would still be the problem of finding which of them has a particular title.

Since the establishment of the Revealweb catalog in 2003 this has been less confusing than when I first needed alternative formats. Nevertheless, it is a bit daunting to discover that a particular item is only available in a small library that I have never heard of and that the material must therefore be acquired through interlibrary loan. And while the Revealweb catalog is available to all public libraries, not all library staff seem to be aware of its existence. Thus a visually impaired person who does not know about it may not find items they would otherwise find useful or interesting. Also, at the time of writing, the future funding of Revealweb is not as secure as I would like it to be. As a national database of accessible formats I believe it should be part of our official national bibliographic service and have sustained government funding.
The difficulty of manipulating alternative formats is a constant if mild irritation. For example, I would read more books in Moon but I travel a lot and many of the books I would like to read come in eighteen volumes when transformed into Moon. This bulk and weight means I can only read these books at home. Finding the next cassette or CD in an audio book can also be problematic. In the past my local public library used raised plastic stick-on numbers to identify each cassette and finding the next one was never a problem. Now, with three or four tapes in each bag I never find the first cassette on the first or even second attempt. The CDs, especially those that do not announce their number at the beginning of each disc, are even more challenging when they have been placed in their containers in random order.

Another testing problem with cassettes is their vulnerability. They get twisted, break, and generally wear out, especially if their initial physical quality was poor. Unfortunately, the fact that a tape is damaged beyond use only becomes apparent during play. Like other visually impaired people using public libraries, I have lost track of how many books I have had to abandon, sometimes on the last tape, because of this particular problem. Of course, it is embarrassing if one has damaged the tapes, but as the problem appears to be a common one might it be reduced if libraries were to ask their readers to inform them about any physical problems with the cassettes when returning them to the library? The CDs I have borrowed seem to be generally in better shape than many of the cassettes, although this may be because they are newer and have had less use. But CDs are not without their own problems, the most frequent of which seems to be that one of them, usually the last, is missing.

I am very aware that the above problems only relate to the cassettes and CDs I get from my local public library. Of course, some of these issues could be minimized if staff were to spend more time checking audio materials when they are returned, but resources are not unlimited. Money spent on staff is not available to be spent on materials, and I would like to see more books in alternative formats rather than fewer.

For most recreational listening I find high-quality cassettes perfectly adequate. I like them because they can be stopped and started again at the same point whereas most CD players do not appear to have a “remember last track” facility and users must rely on a visual display to identify an individual track. Additionally, some audio books on CD have only three tracks on each disc. Fall asleep when listening to one of these at your peril! Like cassette players, DAISY players resume play at the point where the machine was last stopped, although this may sometimes be rather different from the time at which the reader stopped listening.

I have a natural inclination to prefer audio books in an open format, which can be played on equipment that is inexpensive and readily available for as little as £15. This preference is based primarily on their wider
availability everywhere. Anyone visiting their friends or family and taking a couple of books on CD or cassette can be reasonably sure that they do not also need to take the equipment on which to play them. Additionally, DAISY players may be excessively expensive for some visually impaired people whose local authority will not support their annual subscription to the RNIB Talking Book Service (currently £70).

The range of equipment needed for playing alternative formats is another source of grumbles. While there are many MP3 audio books that can be (legally) downloaded from the Web, there are relatively few CD players easily available that, as DAISY players do, also play MP3 files. I know of few visually impaired people who use an iPod because most seem to find them too small and difficult to use. If only the control buttons of CD and MP3 players could be standardized in the same way that it seems cassette players are, life would be very much easier.

As a librarian and occasional user I am extremely enthusiastic about the DAISY audio format. Its only real limitation is the need for a dedicated player or special computer software (available from £30). The DAISY format, with its search and bookmark facilities, makes using an audio book much more like using a printed book, and because there is only one CD for each book there is no problem in identifying the next disc. I hope the day will come when a wide range of DAISY titles can be obtained through local public libraries. The success of the RNIB DAISY Talking Book Service and the NLB synthetic voice DAISY pilot project indicates that visually impaired people like this format. DAISY is one of the reasons why I am optimistic that my own information and recreational reading needs will be more easily satisfied in the future.

In common with much of the rest of the population, many visually impaired people like to satisfy their information needs through the Internet. For those of us who use screen readers this is not always easy as so many Web sites are not fully accessible to us. My own solution is often to visit the NLB electronic reference library service Web site. If that fails to deliver what I want, I use my local public library, which has a wide range of electronic resources. Unfortunately, none of its terminals are equipped with voice synthesis or headphones, and I therefore have to prevail on the ever-helpful staff. Needless to say, I would prefer to be able to find the information for myself. I am hopeful that at some time in the future it will be easier for me to do so.

When I look back to the time I first needed alternative formats, I am astonished at how much more choice there is now than there was then. I am also confident that the extension of choice in both form and content will continue. This is because the improvement in synthetic voice audio means it will be more likely that a wider range of nonfiction will become available on audio.

Two other reasons for my optimism are the Digital File Repository and
DAISY. The proposal to establish a UK Digital File Repository of publishers’ original files should make it much easier for authorized alternative format producers to be more timely with their publications. The DAISY format already makes it possible to use a single file to generate all alternative formats, including large print. These two elements combined mean that it should be possible in the future for anyone who needs a book in a particular alternative format to have their needs satisfied.

The final reason for my optimism is that rationalization within the voluntary sector providers of library services for visually impaired people is already a very real possibility. This should lead to an improvement in those services and potentially more books being made more easily available to visually impaired people, whatever their format preferences. Although I would prefer this to be a government-funded initiative, it is good to think that we might be able to develop something approaching a National Accessible Library Service that will be readily and freely available to all visually impaired people.

Gillian Burrington has been chairman of the National Library for the Blind since 2002. She chaired the Adapt Trust (Access for Disabled People to Arts Premises Today) from 1996 to 2002; she was president of the Library Association (now CILIP) for 1994 and chaired its Equal Opportunities Panel between 1990 and 1996. As a member of her local Family Health Services Authority, she chaired the Ophthalmic Services committee from 1988 until 1996. Gill has worked in public and academic libraries and established Burrington Partnership management training in 1990. She has written widely on library management, equal opportunities, and since 1993 on disability and access to library services.
The Opportunities and Challenges of the Digital Age: A Blind User’s Perspective

Kevin Carey

Abstract
Library services for blind and visually impaired people (VIPs) have been inextricably tied up with alternative format production, which has never risen above 4 percent of standard-text publishing. The impact of digital publishing has been modest on Braille, modified print and audio; this partly results from production methods but also from defensive copyright in which the rights of authors outweigh consumer access rights. In this instance librarians should: assert customer rights against author rights; require piracy evidence; work towards a global digital accessibility library; and advocate a generic right to information. In a global digitally converged environment VIPs will need help with navigation, data evaluation and file migration; these needs will alter the traditional, neutral, role of librarians, transforming them into facilitators, covering what were traditionally described as broadcasting and telecommunications. The biggest single problem for VIPs will be the explosion of digital static and moving pictures.

Introduction
I am not a “normal” or representative library user, if there is such a phenomenon, not the man on the Clapham omnibus nor the little old lady from Peoria. I learned Braille at a special primary school for blind children; I attended a standard secondary school and studied at Cambridge and Harvard. I have been deeply involved in the operations of the Royal National Institute of the Blind (RNIB) and the National Library for the Blind (NLB) in the area of Braille production and library services as a consultant and as a trustee. I have worked in services for blind and visually impaired people (VIPs) in more than seventy, mostly developing,
countries and I am now vice chair of RNIB and studying for a master’s degree in systematic theology. My day job is concerned with the convergence of broadcasting, computing and telecommunications with a bias towards social inclusion that embraces the concerns of VIPs. I am a broadcasting regulator in the UK with de facto responsibilities for accessible content and media literacy. I sit on the Digital TV Group concerned with the engineering involved in the launch of digital television and I spent many years as an active participant in the World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI).¹ Almost uniquely, my work spans that massive gulf between engineers and legislators.

This article will provide a somewhat superficial overview of the issues of content accessibility in the digital environment as they affect VIPs and, to some extent, librarians; and, of course, how these two sets of factors might knit together. An article such as this can often fall some way between being indicative and comprehensive; this is definitely the former which accounts for the frequent occurrence of lists. It largely leaves to one side such issues as fundamental rights, finance, and complex technical issues. Its aim is to provide a narrative that links analogue alternative format provision with the opportunities and challenges that lie ahead in the converged digital environment.

Alternative Format Production

Unlike a general commentary on standard print library services where the supply of material for loan, as set against the supply of material published, can be taken for granted, any commentary on the history and present status of library services for VIPs would be incomplete without some consideration of the interstices of alternative format publishing and production. Whereas the task of the print librarian is to analyze publishers’ lists of books, periodicals and journals to see what fraction of the whole oeuvre best fits the remit and budget of a particular library, the alternative format librarian is loath to reject any material and in most places will also have the task of deciding which items in the mass of printed material available should be rendered in alternative formats.

The RNIB estimates that approximately 4 percent of books published in the United Kingdom (UK) are rendered in alternative formats (primarily audio) while so little nonbook material is thus rendered that it corrects to zero percent (Lockyer, Creaser, & Davies, 2005). The selection criteria, in the UK at least, for the production of alternative format materials may be conveniently, though not entirely tidily, split into three types:

- Popular works of fiction and biography for general readers
- “Classic” fiction and nonfiction whose contemporaneously perceived virtues justify immediate incorporation
• Ad hoc rendering in response to individual needs, mostly in connection with formal education

With the possible exception of contemporary light fiction, the UK holdings fall short in every category but particularly with respect to

• contemporary, as opposed to outdated, academic material, not least in subjects that are incorrectly thought to change very little over time, such as philosophy and theology;
• popular nonfiction and lifestyle material frequently based on public service broadcasting;
• serious fiction;
• ephemera; and
• pornography.\(^2\)

Another production factor that cannot be overlooked is the time gap between print and alternative format production. When you think about it, whether you are a student or a voracious reader who likes to discuss new books with friends, a two-year wait for a book is destructively long. In a system that cannot hope to meet demand time is the great queue-cutter.

This dearth has been a constant factor in access to material in alternative formats, made more understandable because of the very different production techniques involved in creating an audio book, a modified print book, and a Braille book. During the first quarter century of the digital age during which convergences in production have become more obvious, the impact of computing on Braille, modified print, and synthetic speech production has been surprisingly small. There are a number of reasons for this that apply in different degrees in different places but the major factors are

• the continuing management of Braille production systems on traditional, “sheltered workshop” lines with only minor changes in production practice between analogue and digital production (notably the failure to use electronic tools for quality control);
• an unbalanced emphasis, as the result of misguided lobbying, on automated Braille translation software coding, as opposed to layout; and,
• a false perception that there is a trade-off, rather than a complementarity, between Braille and large print from a single, digital file.

Many people use the term “large print” but this overlooks a minority requirement—for example for those suffering from retinitis pigmentosa—for smaller than standard print; and it overlooks the crucial role of font selection.

One final remark may help to explain the balance of alternative format production which, in terms of the amount of production compared with
potential users, is heavily skewed in favor of Braille and against large print. Organizations that serve VIPs tend, quite properly, to take account of the views of users. Not only in “the West” but all over the world, the vocal user community that contributes most to policy formulation consists of the tiny minority of congenitally or paediatrically blind people who have grown up in the visual impairment education system as Braille users as opposed to adventitiously blind people who are highly resistant to Braille and require large print and/or audio books and documents. This, incidentally, should warn those quite rightly concerned with user participation and feedback against an uncritical demographic.

It would be easy at this point to digest this analysis and then move on; but an effort of imagination is required. Imagine this was happening to you. Imagine you went into a bookshop with 4 percent of its shelves filled with books; those books were at least two years old and consisted almost entirely of light fiction, textbooks and an idiosyncratic miscellany. How would you feel? How, do you think, would this affect your life as a human being, as a citizen, as a person intent on rewarding work and stimulating leisure? There are, as I have implied, some helpful technological developments to improve the situation but I want to consider these in the context of a properly founded legal framework to which I will now turn.

**Rights and Copyright**

The extent to which VIPs can access alternative format material does not relate to the constitutional situation in which they find themselves. The formalist Constitution of the United States with its associated Bill of Rights is no better a guarantor of Braille and audio production than the patchwork of constitutional provisions that characterizes the UK. Nowhere is the right to read an absolute right and nowhere is a theoretical right to information translated into anything like complete enjoyment of a right. In spite of the fact that VIPs everywhere pay direct or sales taxes that contribute to public library services this is no guarantee that they will receive any return for their payments. Of course we are all used to the idea that taxes paid by one person go towards services she does not use, but whereas the general structure of taxation is supposed to facilitate a net transfer to the less well off from the better off, this net transfer is usually from less well off VIPs to their better off seeing peers. This argument, in the UK at least, has cut no ice with central or local government, and matters have not been helped by not-for-profit providers who have grown to see their client base as an institutional asset. As long as the private, voluntary sector is prepared to finance and provide a service (without declaring its fatal flaws) the public sector will surely let it. It is unreasonable to expect a politician or senior official to know that an alternative format library service run by the not-for-profit sector only offers a fraction of what is offered by the public library service. The appropriate model, once public sector
obligation and not-for-profit sector limitations have been fully clarified, is one of agency where specialist providers are paid by the public sector. An important first step is to establish case law and regulations on what constitutes a library service and whether this does, or should, include provision for VIPs.

Even if such a right to read were conceded as general it would still have to face competition for legitimacy within an overall rights framework. The past decade has shown both in the European Union (EU) and the United States that the right to read must be balanced by the author’s rights enshrined in copyright. It took more than a century for Braille transcription rights to be automatically accorded in the United Kingdom; in the EU alternative format access was deemed less important than the author’s right to withhold permission. Only in the United States and Canada has the general right been accorded, but this operates strictly within nation-state boundaries, a topic to which we will return.

Behind the opposition to granting alternative format production rights there lies a myth born of the endemic defensiveness of the publishing industry—that of the text pirate. Now it is the case that high-quality pirate DVD copies of forthcoming movies are on the streets in Singapore before official release and it is true that there has been some music piracy from Autolycus in Shakespeare’s A Winter’s Tale to Napster (although over the technology cycle this usually generates net additional sales). There has even been a little pornographic-text piracy of books such as Fanny Hill but the idea that VIPs are going to use digital text files to produce text printouts or audio files to produce pirate audio, for commercial purposes, is totally preposterous. If anything is worth pirating there will be networks with better production and distribution systems than any individual VIP. Agencies concerned with VIPs should follow four lines of action that are closely linked, the first two of which I will deal with summarily:

- Any publisher pronouncement must be judged against probability and not possibility and against evidence rather than assertion.
- Library services for VIPs should seriously consider invoking rights of access in the face of copyright barriers. This puts the onus on authors to sue, thus creating case law that may initially produce an unfavorable outcome but that will consequently produce a better environment for change.
- A global digital publishing deposit should be established.
- A generic platform and medium-free right to information in accessible form at an equivalent price should be established.\(^4\)

As the digitization of old books and the increase in digital publishing both gather pace, the establishment of a digital deposit at the national level is now a distinct possibility but globalization surely calls for national deposits to be integrated.
As for the establishment of a global, generic right, the UK Braille copyright point I made earlier illustrates well the first part of this proposition. Agencies working with VIPs may secure automatic rights of Braille transcription but they are nowhere near achieving the same right for modified print, audio, digital text, and DVD. The not-for-profit sector cannot spend all its energy mounting a campaign every time a new digital information medium is developed. There is, further, the complication of the platform on which the information is made available: if you achieve the right to audio description of television programs this does not secure the identical right for cinema shows, DVDs, or video clips received on mobile telephones. It will be a long haul to achieve a generic right but there is no real alternative; the indications are that new media and platforms will continue to emerge at a rate much faster than the sector can handle. Paradoxically, perhaps, the global requirement in my formulation will speed up rather than slow down the process; if the sector can think of the world as a matrix of jurisdictions and provisions, then every time a provision is achieved in one jurisdiction it should be translated across jurisdictions. We are dealing increasingly with global publishers so we need to develop a global strategy. This leads quite properly into a consideration of a global production and distribution system for alternative format material—the global library.

**The Global Library**

Not long ago, to my great delight, the RNIB produced a parallel text version of Dante’s *Divine Comedy* with the Italian on the verso and the English on the recto pages. It was, in every imaginable way, a monumental reading experience, produced without a single Braille error; but what struck me later was the fact that the Italian text had been generated in England—it had not been downloaded or copied from an Italian digital source. Was there no digital source, copyright free or otherwise, of the text? Or was it, in the short term, easier (though this is difficult to imagine) to transcribe the original text from scratch rather than editing a download? I daresay that old habits of quality control die hard, as do the entrenched position of copyright holders, but the production of high-quality Braille is too costly and specialist to be devoted to replication. Perhaps the key point of this story, however, is the failure to use automation. We live in a world of global data networks and increasing interoperability but, as I noted in my comments on the less than satisfactory impact of computing on Braille production, automation has not achieved what it should. In the first instance the sector, through a lack of understanding of the print industry, pursued an illusory “Holy Grail” of the printer’s digital file which could then be rendered in Braille. This was illusory because books usually are assembled from a variety of printers’ files, which contain “flags,” and these files are then usually bound into a graphical file format. The real “Holy Grail,” for the time being at least, is the construction of pure HTML files which can be rendered...
through style sheets to produce different formats of Braille, print, and synthetic audio. If the sector can bring itself to produce common format source files then we will have played our part in establishing conditions for a global library. As I noted earlier, we are dealing in a global market; to take the example of Microsoft which has committed itself ethically and financially to the creation of a global digital library for VIPs, we do not have to convince a Microsoft hydra with its heads in various regional offices. This is, perhaps, just as well because the VIP sector is not well equipped to talk to business. Discussions of rights and their enjoyment, of social services and special education, have traditionally been matters for the public and voluntary sectors; but all this will have to change.

The widest known harbinger of future concerns has been the commotion in the VIP sector caused by the Portable Document Format (PDF). PDF was specifically developed to preserve the content and layout integrity of authored documents; its very being depends upon its ability to prevent tampering. This, however, flies in the face of the need for alternative format producers to manipulate the file—not the text itself so much as the metadata and layout (epigraphia, contents pages, page set-up, headers etc.), the handling of graphics and pictures (tables and image description) and footnotes and indexing. The reason that PDF is important, however, is that it foreshadows the flight from computerized symbolic language strings (like ASCII) to graphics formats. To get some kind of handle on what I am referring to, think of the growth in two key areas: cameras on mobile phones and the downloading of video from the Internet. The implications of these developments are enormous. While the sector is still thrashing around (perhaps that is too vigorous a verb) aimlessly trying to come to grips with the world of digital text, the global digital economy is moving into graphics. When I first sat on the WAI in 1997 the whole emphasis was on text and the textual realization of static graphics (I can still feel the cold silence when I asked what we were going to do about broadcasting over the Internet), but the next iteration of global standards for the Internet will not be set by Microsoft and its ilk but by Hollywood. By 2010 private photographic files and commercial video will dwarf text production (including 20 million blogging sites) on the Internet. This, incidentally, is why Lynux is a dangerous side issue; in spite of its shortcoming, Microsoft is the only global player with enough clout to fight the accessibility cause in the face of Time/Warner, Disney, News Corp and the rest.

And so, in summary, there are three factors that need to be brought together in a global library strategy:

- A global generic information right
- A single source file format for alternative format production
- A capacity to anticipate the graphical environment
My final point in this section is that we must learn from our problems in dealing with the age of digital text. The alternative format sector needs

- to develop and own common tools to render text from graphics files into a form that can be turned into a source file, which can then produce alternative formats;
- common templates through which we can render these files; and
- to agree on metadata conventions for alternative format description.

Quite separately—in a production setting I have not so far discussed—the not-for-profit sector needs to make deals with the producers of commercial audio books; the parallel operations of the two sectors are wasteful.

**Navigation, Evaluation and Migration**

I did issue a warning right at the start of this article that I would have to concern myself with the interstices of alternative publishing and production, but at least we are now approaching subjects closer to the heart of librarians. Nonetheless, we will find that it will be difficult to disentangle the three elements in this section which I define as follows:

- Navigation—finding the information that people want that has specific VIP aspects
- Evaluation—according weight and relevance to data that has special VIP aspects
- Migration—rendering digital files in such a way that they are amenable to access by VIPs

In the analog age the first two of these aspects of information were librarian-led; the librarian

- decided where to store the book (navigation via the Dewey Decimal System); and
- advised borrowers on what to read (nonjudgmental evaluation).

Books were usually in a fixed format, however, so there were no migration possibilities.

**Navigation**

As librarians will appreciate more than any group, other than classical philosophers, the key to efficient navigation is sound taxonomy; this is even more the case for VIPs who cannot rapidly scan vast arrays of classes of data. In the computer environment, screen readers cannot easily convey, either in voice or Braille display, the spatial aspects of data classification, and even where the metadata does not rely upon spatial clues, the choices offered are too many to be efficiently retained by a user who listens or touches exclusively one line at a time. As George A. Miller’s (1956)
formulation shows, if the optimum number of choices in conducting a complex search is +7 or –2 there has to be a complex trade-off between classes and “clicks”; the larger the number of classes the fewer the number of clicks and vice versa. Many people overcome this problem by using Boolean search language to define their needs; use of Boolean overcomes some of the problems of poor taxonomy but it depends on an accessible input device. VIPs may need

- a Braille-like input device;
- a qwerty input device with voice feedback (to verify entry); voice in (although this is currently not reliable for extended lexicographies);
- Short Message Service (SMS) (more widely used than qwerty); and
- on-screen customization of the text input box.

Underlying the special problems of VIPs in the field of navigation, there is a deeper question: Should we abandon our twentieth-century near obsession with metadata and rely much more heavily on teaching and learning how to define searches that trigger context-sensitive results? During the last twenty years I have suffered the somewhat depressing experience of working alongside alternative format librarians fixated on metadata when there has been only exiguous data to classify. Now that there is an unimaginable amount of potentially accessible content we may simultaneously be leaving the age of metadata not only because no body will be able to impose a standard and authors will not conform to a given standard but also because it may no longer be necessary.

This, of course, will not mean that librarians will be left with nothing to do; just the opposite. Although some VIPs may wish to search in a totally autonomous fashion (and that is a legitimate aspiration), many will want the librarian to work with them on search strategies to find what they need. Where the librarian has much greater facility in scanning on-screen options and inputting to a text box, many will wish to moderate their autonomy in exchange for efficiency. In this context, librarians will need to adapt their methodology so that they can collaborate rather than simply working autonomously “on behalf” of a user.

**Evaluation**

Librarians rightly value their traditional position of being nonjudgmental; but they were protected in this to a large degree by the relationship between the nature of material and its format: books, peer-reviewed journals, periodicals, magazines, “quality” and tabloid newspapers and, for that matter, self-publishing and private views all commanded instant market recognition. Users largely assessed the kind of information they were offered according to its physical presentation. At a more profound level there was, until quite recently, a set of firm cultural demarcations
between, for example fact and fiction, fact and comment, fact and advertising, peer review and self-publishing, and publishing and broadcasting, with their different legislative and regulatory requirements (these will be discussed further in the discussion on digital media below).

Now that these links between physical presentation and content are much weaker in the analogue world—and have disappeared in the digital world—content evaluation becomes much more difficult, but in the case of VIPs such judgments are inevitable and vital if unwelcome. As available content from analogue and digital publishing explodes, as we have noted earlier, VIPs cannot hope to gain access to all of this material, and so choices have to be made. In many English-speaking countries such as the UK, the United States and Canada, book selection for alternative format production has been a librarian function in the context of not-for-profit publishing and analogue Brailling/recording when the output was intended either for a broad market or for a highly specific educational purpose. Digital technology has both lowered the cost and the barriers between different alternative formats and, at the same time, it now makes production for small groups and individuals far more viable. This, in turn, changes the role of an accessible format librarian from being an institutional adviser to being an adviser to individuals. In the general library, librarians need to have some basic awareness of what can and cannot be adapted for use by VIPs. The basic point is the same in both contexts, however; VIPs neither have the time (as they access data more slowly than seeing peers) nor the resources (alternative format production of Braille is much more costly than standard print) to be as speculative or serendipitous in their acquisition of content. Left to themselves they will be at the mercy of a variety of limiting factors such as

- their own limited knowledge;
- knowledge within their sector;
- commercial content ranking (in Google, Yahoo, etc.); and
- what they reach first.

The key point about the exercise of this delicate function is that the librarian and the user must be clear what the process is and use it consciously rather than making assumptions that are not mutually understood. For a librarian to exercise a value judgment is somewhat “counter cultural,” but to draw back from this strategy will almost certainly damage the interests of clients. VIPs will only have a limited grasp of the wilder shores of the Web and will need help; this is equally so with broadcasting (see below).

Migration

In the last section, I briefly referred to the need for librarians to know something of what materials can and cannot be rendered into alternative
formats. I encapsulate this process in the term “migration,” as opposed to both “transcription” and “recording” on the one hand and “translation” and “conversion” on the other. Migration covers a mass of rendering issues but here are the most important.

**Description** By far the most important barrier to content migration is that between the picture (as opposed to a technical diagram) and an adequate text rendition. Even where the quality of description is very high, there is always going to be a gulf between, for example, a work of art and its catalog description. This issue is further complicated by the different, more fundamental requirements of congenitally blind people compared with adventitiously blind people and those with residual vision.

**Tools** The conversion of content between formats through the use of tools is a core strategy for migration. Currently the key tools requirements are conversion between

- word processing formats;
- word processing formats and HTML;
- graphics files containing text and manipulable word processing formats;
- metadata and data customization;
- layout conversion macros for modified print and Braille; and
- legacy content migration (many VIPs have legacy operating systems, programs and data).

**Scale-usable Display** When a page of text or an image is scaled up or down this presents layout problems. With books, unless the layout metadata is separated from the data, items such as headers appear in the middle of pages; with text and images gross magnification can cause a loss of orientation so there must always be a balance between magnification and orientation. In Braille transcription the general assumption is that the central problem is print to Braille symbol conversion but this is not so; the key weakness of automated Braille translation software is its poor handling of layout and page making. There is, incidentally, a related problem with determining the scale of tactile diagrams where the balance is between fineness of detail and overall grasp.

**Lexicality** Increasingly with printed media and very markedly on the Web, content layout does not follow the traditional order of vertical and horizontal order (in English from top to bottom and left to right). Automated systems are not always efficient with this problem and it even presents problems for manual transcribers and interpreters.
Parsing The unlimited scope for Internet publishing has led to a less stringent way of presenting material which requires automated parsing for efficient content retrieval.

Information Systems

Before dealing with the substance and implications of convergence, it would be helpful to summarize the characteristics of the Internet, broadcasting and telecommunications as they impinge upon library services for VIPs; consequently, this is a somewhat narrow analysis.

The Internet

As we have already noted, one of the main characteristics of the Internet is that its content is indescribably heterogeneous. For VIPs, whose information searching and processing is enforcedly much more deliberative than it is for their sighted peers, this presents both a major opportunity and a challenge. The opportunity is to lift VIP content access out of its traditionally narrow channel which has limited their outlook and made reading a largely conformist, as opposed to a heterodox experience, largely dependent on institutionally mediated alternative format production and regulated broadcasting. The challenge is to direct content access towards the purpose for which it is required.

We need to bear in mind, however, that the Internet is in a state of transition from a largely textual to a largely multimedia carrier. There are three major kinds of data that will soon be carried in bulk on the Internet:

- Commercial video on demand
- Broadcasting
- Personal photography and video

The providers of these kinds of data will inevitably become dominant in defining Internet standards, and those standards are likely to be much more concerned with multimedia transmission than text accessibility, as discussed above at the end of the section on the global library.

Broadcasting

The age of linear broadcasting confined to transmitting on a scarce spectrum allocated by governments is almost at an end. Linear broadcasting has already been complemented by time-shifted viewing through the use of video recorders and now it is being further complemented by video on demand from broadcasters and other commercial suppliers. Initial spectrum scarcity was first radically loosened by the use of cable and satellite broadcasting, and now digital broadcasting is on the horizon. The cost of obtaining permission to broadcast, set up, produce, and transmit content are all falling; and the trend to “escape” all restrictions by broadcasting
over the Internet (TV over IP) will increase. The small number of linear channels has already been replaced by the availability in many countries of more than 400 channels made accessible through an electronic program guide (EPG) which provides access to channels and provides up to seven days of program information. Although the structure of EPGs is almost always much more intuitive than Web site navigation systems, they present accessibility problems and, as they expand, they will also present navigational problems. Broadcasting is also moving much closer to publishing not only in its legal framework but also in the way it “looks and feels” to end users. Monopoly and cartel television, for all its faults, was an important part of common culture and was, in spite of its variety, predictable. Television content is becoming increasingly varied and unpredictable.

*Telecommunications*

It may well be that in spite of the different histories of the computer-mediated Internet and television- and radio-mediated broadcasting, the technology that will be at the core of our content experience will be the telephone. Telecommunications have been developing more rapidly than any other medium, moving in twenty years to high-speed cellular delivery that can carry video clips and will soon be able to carry real-time feature-length movies. It will, in other words, be the equivalent of a cable-free computer.

For VIPs the telephone, if it can be made accessible, has a number of key advantages:

- It does not need to be found.
- It does not need to be learned anew.
- It provides privacy.

This last factor is often underestimated. Computer and television access for VIPs is even less private than it is for their peers. The telephone is by far the best device to access privately financial, health, sexual and gambling content.

**Convergence**

*Hardware*

Whatever the ultimate hardware outcome, it is clear that the three components of content access and processing—the information controller (remote control, dial, keyboard); the processor (television/radio set, computer, telephone); and the output device (screen, speaker)—will become separate, cable-free components. Already the television has been split between the remote controller, the screen, and the processor; the hi-fi has been split between the controller, the processor, and the speakers; and
the cellular telephone has been split between the screen/processor and the earphones. The advent of portable screens and distributed processing power (wireless hot spots, etc.) will further granularize the technological production system and enable users to assemble their own components or “borrow” ambient capacity.

The likely outcome of this evolution is that all digital content processing devices will converge into a multipurpose processor and that this device will be produced in a substantive form for the home and in a microscopic form for portability. These processors will be driven by a highly personalized input device, and data will be produced through a highly personalized output device. All three will be cable free.

The implications for VIPs are clear:

- The “collapse” of a variety of consumer electronics devices (TV, CD, radio, PC etc.) will enable more money to be spent per capita on customized devices.
- Accessibility issues will become generic.
- Upgrade disadvantages will decrease.

**Digital Data**

We have already seen how television (and radio) is moving towards IP broadcasting, and individual publishers and companies will also increasingly adopt graphics and multimedia to dispense their content. (“Multimedia” simply means the simultaneous offering of sound, moving pictures and text—think about television.) All of this data will be available over the telephone system.

To summarize an extremely complex set of issues as they relate to VIPs and library services, the distinction between traditional content services mediated in a nonjudgmental way by librarians (paper-based media and some audio) and analog broadcasting (television and radio) is not reflected in the digital age with its spectrum of digital content production from organizations as large as the BBC to individual Web pages. The library system is going to have to find a way of meeting the challenge of mediating digital information for VIPs.

**The Librarian as Facilitator**

*The Digital Divide*

Before looking at the positive role that librarians can play in the digital information age as content facilitators for VIPs, it is important to offer some context information with respect to the relative position of VIPs in the digital environment. In spite of the outstanding intellectual and professional VIPs, it is important to recognize that access to content for this
group has always been an extrinsic as well as an intrinsic problem; scarcity of content and the capacity to process it have often combined seriously to disadvantage VIPs. In the emerging digital environment these characteristics have altered slightly in spite of their fundamental accuracy. Absolute scarcity is being replaced by comparative disadvantage. While everybody will have access to much more content in the digital age than at any previous time in history, the gap between VIPs and their peers will inexorably widen even in terms of access to text. An increasingly multimedia society with the focus on the visual, however, will further widen the gap. With respect to the demographic of VIPs, there will always be a small number between the ages of fifteen and sixty in need of a high level of academic and professional support but the majority of congenitally blind and many congenitally visually impaired people will suffer from disabilities in addition to blindness. At the other end of the scale, the massive majority of VIPs will be people over the age of sixty who will increasingly be digitally literate but who may not be able to adapt to emerging trends as comfortably as younger people.

The effective access to information in an attempt to keep this comparative disadvantage to a minimum requires that the right to information be understood in an active way. Not only must the right be practical rather than simply theoretical; it must be effective and, in being so, we may need to make some fundamental changes to the way we think about information access channels.

Facilitation

As I have said earlier as a subsidiary comment to other considerations, the traditional relationship between the librarian and the VIP user has been somewhat “top-down” and at arms-length, but this position needs to be replaced by a conscious, collaborative process. Librarians need to understand better the needs of VIPs, but VIPs also need a better understanding of their own needs. In parallel with this, librarians and VIPs need to understand better the emerging digital environment. No matter how difficult this is going to be for librarians, it is going to be much more difficult for VIPs who will have to come to terms in a highly specific way with their own shortcomings; we are in that most problematic of areas, trying to know what you do not know. VIPs, particularly blind people, are shielded from a great deal of the world that their peers take for granted, not least the febrile and violent world of much of the media, factual and fictional.

This takes us into an area where traditional librarianship is at least contiguous with, but will increasingly overlap with, the roles of teachers, trainers, psychologists and sociologists. For a profession that has gained much
of its respect from detachment, this is a serious prospect. I am inclined to think, however, that as the fundamental role of librarianship is facilitation, these problems of boundaries can and will be overcome.

CONCLUSION

In conclusion, I am often asked, as a user, what I would like to see happening in the next few years. My immediate, not altogether grateful, response is that there are many things that I could have and that I want now such as

- public sector insistence on pure HTML in Web design,
- the regulated accessibility of EPGs,
- better automated Braille translation layout;, and
- better designed hardware such as remote controllers and mobile phones.

But there is a much deeper question that we must all face squarely—with tact but not with denial—and that is the static and moving picture revolution.

If we rank technologies in descending order according to their inclusive impact on VIPs, the list would appear as follows:

- Telephone—substantial increase
- Radio—substantial increase
- Text-based computing—modest increase
- Silent movie—modest decrease
- Talkies—substantial decrease (because of wider penetration than silent movies)
- Television—massive decrease (because, in spite of its use of audio, of its ubiquitous force)

Multimedia will have the same impact as television but image-only content will have an incalculably high exclusion potential, even worse than television.

It is in this vibrant, image-saturated environment that we have to understand and meet the needs of VIPs and, if we are honest, we are not really ready. We must begin with a realistic assessment of what can and cannot be done. As I never tire of saying, not even the Louvre catalog entry can make the reality of the Mona Lisa real to a congenitally blind person. Both the seeing facilitator and the VIP have to accept this. At the other end of the spectrum, there is no reason why seeing people should not be able to describe accurately fixed, physical characteristics such as height, proportionality to other known objects, the ordinary and the curious and, to a degree, color for those who can still see enough to appreciate it or who can remember what it means. Not many of us will have the facility of
Proust with Elstir but a structured approach to constructing a curriculum for visual description is not beyond us.

Perhaps oddly, then, when I have surveyed the whole of the converging digital media environment I conclude with emphasis on a human skill—the ability to describe an object in such a way that the description has an impact on the VIP’s understanding of the world in which she lives. My overwhelming impression of myself and my VIP peers is that we are almost surreally naive, almost living in a parallel universe. We know the language of “The sky is blue,” “The girl is beautiful,” “The stars are bright,” and “He looks threatening,” but what do these really mean to us outside the necessary language of superficial discourse? We know that human beings are shown killing each other on the nightly news and in our crime thrillers but we do not know whether the inability to see this makes us less or more callous. We know that commodities are sold through sex but we do not know whether the deprivation from the ubiquity of sexual imagery makes us more or less able to have effective relations with our partners. We know how we are deprived of incalculable quantities of casual, serendipitous visual data with which our peers are bombarded, but we do not know whether its absence makes us more thoughtful or more ignorant, or perhaps both. Depending on structure as we must, to help us make sense of the world, we do not know how well we understand a world that is increasingly improvisatory, aleatoric. We, who cannot step out of the door without planning, are thought years away from the casual freedom of our friends.

This is not the sort of language that you expect to hear from the VIP campaigner, from the lobbyist, from the ideological egalitarian; but if we do not understand how to face these questions honestly, we will suffer from an even wider gulf between ourselves and the rest of society. Unless blind and visually impaired people are prepared to discuss and understand the depth of their deprivation, society will be severely limited in its capacity to provide sensitive facilitation. As usual, it is not the technology but the people who constitute the main barrier to solving our content accessibility problems, and, not for the first time, the beneficiaries are a greater obstacle to progress than the providers.

At a level that is difficult to gauge, we have been in a state of denial with librarians heroically attempting to be content providers, as well as facilitators on the basis of hopelessly low budgets and outputs compared with the world of print and pictures. On the other hand, VIP users bravely put their notional equality ahead of their actual deprivation. The tact of the former and the vulnerability of the latter make it difficult to see how an honest dialogue can be commenced. But it must, and my suggestion is that we need help from people outside the sector—from authors, artists and en-
engineers accustomed to designing and describing, people who come with no baggage, people who are not over-awed into denial by the gap between the real and the realized. But these people should be brought in to teach us, not to substitute for us, because, in the end, when it comes down to the wire, it is easy to write a list of what we each want other people to do, a list of outcomes for which we think somebody else should be responsible. In the end, however, we—librarians and VIPs—have to take responsibility for ourselves and, above all, to know ourselves.

Notes
1. See http://www.w3.org and http://www.w3.org/WAI.
2. On this point I recall that when I was in high school the Braille transcriptions of the Roman poet Catullus were censored.
3. Autolychus is a seller of pirate sheet music ballads.
4. The concept of equivalent price is not limited to the concept of paying for alternative format content at the same price as “ordinary” content; it also embraces the idea of a price discount where a product contains a substantial body of illustrations.

References

Kevin Carey is the founder director of humanITy, a UK charity focusing on information and communication technologies and social inclusion encompassing computing, telecommunications, and broadcasting. He is a member of the Ofcom Content Board, which regulates broadcasting; a National Endowment for Science, Technology and the Arts Fellow in accessible broadcasting; a strategic adviser to FutureLab; and an adviser to the UK government and the EU on accessibility policy. He is the vice chair of the Royal National Institute of the Blind and has been a trustee of the National Library for the Blind, participating in the Exlib and TestLab projects. A prolific writer (with more than 100 published papers) and lecturer, Kevin edited the British Journal of Visual Impairment from 1995 to 2001 and currently writes for Managing Information and Ability Magazine. From 1977 to 1992 he worked for Sight Savers International after graduating from Cambridge and Harvard. Born blind, Kevin was educated at special and mainstream schools. He is a published poet, drama producer, chorister, and former classical music critic. He is a licensed reader in the Church of England.
An Overview of International Research into the Library and Information Needs of Visually Impaired People

J. E. Davies

ABSTRACT
The background to general user needs assessment, including its value in service design and development, and the range of applicable methodologies is discussed. The diverse nature of users is recognized and the inappropriateness of a “one size fits all” approach is emphasized, with particular reference to visually impaired people. The place of research in supporting an evidence-based approach to service design and development is noted. A contextual section identifies some of the drivers that underpin appropriate and adequate provision to visually impaired people. They include legislation, international conventions, and codes of practice. Key features of the research agenda are identified. Much of the recent research relating to user needs coalesces around the theme of information technology, particularly the Internet, and assistive technology; another component of the research agenda comprises investigation of the general needs of visually impaired people in achieving a fulfilling lifestyle that includes access to information and libraries. Selected examples of completed research work from different countries are described in terms of scope, methods, and outcomes. An assessment of the need for future research concludes the article.

INTRODUCTION
The modern library and information service features access to information in all its forms coupled with a range of services designed to support users, as well as space in which users may engage individually or collectively with information. Those users may draw on the library’s resources for a variety of purposes in their daily routine, including leisure, learning,
work, and living. An aspiration for the library and information service is that it is equally hospitable to users of all kinds and it knows no artificial boundaries in terms of information. The reality, of course, is that resource constraints impinge greatly on what a service can provide, and there is a constant assessment of priorities based on the affordable and perceptions of user need. However, those users are by no means uniform in their need for information, or in the way that they can or do access it. One test of a service’s commitment to fulfilling its brief is the way it deals with visually impaired people, including discovering who they are, what they need, and how they can be best served.

It is fair to say that libraries in the modern world generally display a sensitivity to user needs that compares favorably with a range of comparable services in both the public and private sectors. The literature on users and user needs is abundant, and we have come a long way from the days when simply maintaining a building and stock were regarded as sufficient ends in themselves. Some of this situation has been brought about by the professionalism and commitment of librarians to bring together the community and information in imaginative ways. Another factor has been the increased emphasis by governments on demonstrating not only the efficiency of libraries but their impact on users as well. A third strand of the issue relates to the way in which legislation in many countries has placed social inclusion and equality of opportunity at the forefront of community action.

Determining what users need is, of course, a challenge not least because of the diverse nature of those users. Mechanisms exist to canvass opinion and identify activity regarding libraries. Examples include collating usage data from in-house library systems, reader exit surveys, and Web-based questionnaires, some of which may be quite extensive and sophisticated in their scope. In terms of population characteristics, however, the granularity of the evidence gathering rarely goes beyond differentiating between adults and children, or between students and teachers. Moreover, what of nonusers, or as Christie Koontz (2005)—a leading authority on library users and marketing at Florida State University—prefers, “potential users” within a community? Community profiling using geosocial data can assist planning and decision making at the general level, but it does not penetrate into establishing the expressed needs, wants, and attitudes of people.

These issues take on an even sharper focus when we consider visually impaired people and the strategies to include them in service development and delivery. The significant number of people in the community that have a visual impairment of one kind or another, and, indeed, the varying degrees of impairment within that group, exemplify why a “one size fits all” approach is of little value in discovering needs and is manifestly inappropriate in service design.
This article takes the theme further and explores some selected examples of recently reported activity regarding the determination of visually impaired users’ needs through appropriate research. It has to be stated that the recent material published in this specific area is relatively scarce and that the treatment here is illustrative rather than exhaustive. Much has, however, been written on describing the predicament of service provision to visually impaired people and its resource base as well as on recommending good practice, but little of this material draws upon evidence from empirical research. This particular area of research is not alone in this respect; evidence-based practice in its full manifestation has yet to gain a secure foothold in library management, as was observed by the author recently (Davies, 2005).

WHAT OF RESEARCH?

Before examining research in any depth it is appropriate to consider its scope and relevance. Much has been expressed over the last few years regarding the nature of research in the field of library and information services. Only recently in the United Kingdom, the Chartered Institute of Library and Information Professionals (CILIP) adopted a policy and strategy for research that incorporated a definition.

According to the *Oxford English Dictionary*, research is defined as “A search or investigation directed to the discovery of some fact by careful consideration or study of a subject; a course of critical or scientific enquiry.” Research in the context of this discussion may involve a range of methods and approaches. A great deal of valuable information can be derived from desk research on existing studies and statistics; in any event, such an approach is a necessary preliminary to any new empirical study if only to establish a baseline and identify realistic boundaries. Primary data may be acquired directly from users and potential users by a variety of means, including interviews, focus groups, and perhaps surveys, though the latter will have to be in a format that is accessible to respondents. Individual case studies offer a rich picture but are time consuming to assemble and document. Assessing in detail how users react to services and systems, particularly novel ones in prototype, offers another approach to creating a view of user needs. Employing this “What happens if . . .” technique can reveal latent and unexpressed need, but it can also raise expectations unduly if prototypes do not migrate into the operational realm.

Research and the findings of the research need to be put in perspective. It is what research tells us regarding the design and development of services that is important. Research does not in itself offer ready-made answers. Put simply, it allows the good designer to design better systems and the good manager to manage better. Thus, research results need to be interpreted intelligently and acted upon appropriately. A long time ago Donald Urquhart, himself no stranger to the conduct and application
of systematic research, very wisely asserted that “research is no substitute for thinking” (1967).

**CONTEXT**

The provision of appropriate and adequate services to visually impaired people is underpinned by several drivers, all of which to some extent are based on a philosophy of inclusion and adherence to best practice. Legislation in many countries creates a mandatory framework in which visually impaired people have to be accommodated. In the United Kingdom, for example, there is the Disability Discrimination Act (1995) and the Special Educational Needs and Disability Act (2001). Correspondingly, in the United States there is the Americans with Disabilities Act (1990).

Then there are the formal expressions of intent regarding provision for people with disabilities from such agencies as the United Nations, which has its Standard Rules on the Equalization of Opportunities for Persons with Disabilities (United Nations, 1993) and has in preparation a formal Convention to Promote and Protect the Rights and Dignity of Persons with Disabilities (United Nations, 2005).

Finally, there are the recommended codes of practice that specify practical methods of achieving suitable outcomes for visually impaired people. There are guidelines (Kavanagh & Christensen Sköld, 2005) and a checklist (Irvall & Skat Nielsen, 2005) from the International Federation of Library Associations. Examples in the United Kingdom include a manual of best practice sponsored by the Museums Libraries and Archives Council and available on the National Library for the Blind Web site (Hopkins, 2002), as well as a briefing document from the Chartered Institute of Library and Information Professionals (CILIP), the national organization for the profession (CILIP, 2005). In its earlier role as the Library Association, it was responsible for the creation of national guidelines (Machell, 1996).

All of these sources create an imperative for providers to know salient evidence about how and why visually impaired people use information and how it may best be provided. Some of the guidelines and codes also reveal insights into methodologies for discovering that evidence.

**THE RESEARCH AGENDA ON VISUALLY IMPAIRED PEOPLE’S NEEDS**

Much of the recent research relating to user needs coalesces around the theme of information technology (IT), particularly the Internet, and assistive technology. Information technology is sometimes heralded as the aid that holds the promise of solving almost all information access problems for visually impaired people; its supporters argue that it only awaits the appropriate hardware and software. On the other hand, there are important issues regarding the usability and availability of the technology that remain to be addressed; key issues include the skill base available
to take advantage of specialized technology as well as its affordability for a significant portion of society. A great deal has still to be learned about varying user preferences and aptitudes as well as the social dimensions of computer access and use. Several experimental services and IT configurations have featured an assessment of users’ experiences and needs as part of their evidence gathering. Other studies have been designed specifically to acquire such information.

Another component of the research agenda comprises investigation of the general needs of visually impaired people in achieving a fulfilling lifestyle, including access to information and libraries. They therefore embrace general overviews of users’ needs and practices regarding information gathering and use. Some are more targeted on specific information and library issues.

**Information Technology and Users**

The NOVA project (Craven & Brophy, 2003) represents an example of a study featuring practical trials to discover information about how visually impaired people approach and use technology. The study explored the searching performance and behavior of twenty visually impaired people, and it also involved a comparison group of twenty sighted persons. The basis of the experiments was that sighted persons generally search complex Web pages, incorporating frames and links in a nonlinear manner, while visually impaired people have to search in a linear manner using one page at a time and backtracking through pages to navigate successfully. During the experiments activity was logged by recording key strokes and mouse clicks together with participants’ verbal description of the search. In this way, it was possible to establish not only what was being done but also why and how people felt about it. In addition, semistructured interviews were also conducted to discover attitudes toward the technology based on the searching experience. The results indicated that visually impaired people spent more time navigating through searches. Moreover, not everyone had access to the latest assistive technologies. Important messages emerged for information designers and providers.

A Canadian initiative, the Information Now project, focused on extensive testing of the DAISY format. The three-year project explored the extent to which visually impaired people with varying levels of skills were able to access and read DAISY formatted documents. The Canadian National Institute for the Blind established a Community Learning Network to support visually impaired participants at six sites distributed throughout Canada. In all, fifty-six people with varying degrees of technical skill took part in the study, which involved using the format after training. Information on user performance as well as preferences and needs was gathered during the project. The results contributed greatly to informing the selection and production of accessible materials for visually impaired people.
A report of the study, including user responses, was published (Canadian National Institute for the Blind, 2005a), and this was followed by a guide to best practices for DAISY book production based on the outcomes of the trials (Canadian National Institute for the Blind, 2005b).

The Accelerate Project, funded under the European Union Leonardo da Vinci Programme, involved a consortium of library services and support agencies for visually impaired people from several countries. It featured an experiment to assess the impact of providing visually impaired people with equal access to digital information through information technology and adaptive equipment in academic libraries in Thessaloniki and Nicosia. The institutions and agencies involved included the University of Macedonia Library, the Cyprus University Library and the Cyprus Library, together with the University of Graz Library, the University of Linz Institute of Computer Science, the Federation of Dutch Libraries for the Blind, the Parahellenic Association of Blind of Central Macedonia, the Union of Blind of Northern Greece, and Voluntary Work of Thessaloniki. The project was coordinated by Polyplano Euroconsultants in Greece. In addition to providing appropriate technology, the project embodied a high level of support and training for the librarians in the two libraries as well as the visually impaired people involved. An evaluation phase featured extensive study of user needs and perceptions through a series of interview-based surveys, one before and two after the installation of equipment. The design of the survey instruments drew on earlier experience with the TESTLAB project. Though the number of respondents was not particularly high, the surveys did yield useful information to inform the development of mechanisms to support visually impaired people in using libraries. All three stages of the evaluation were fully documented (Oosting, 2000, 2001a, 2001b).

Though it represents activity before 2000, which is the notional cut-off date for examples in this article, the multinational TESTLAB Project, which ran from 1996 to 1998 with partners from Ireland, the UK, the Netherlands, Austria, Italy, and Greece, is worthy of inclusion. To a large extent it laid the foundation for developments in facilitating digital information access for visually impaired people and for testing their impact. Funded by the European Union under its Telematics for Libraries Programme, it featured a series of practical trials employing adapted workstations located in selected public and academic libraries; visually impaired people could gain access to catalogs, networks, databases, and electronic documents with these computers. Trials took place in Austria, Italy, Ireland, and the United Kingdom. The project not only tested technological configurations and solutions but also gathered information on user performance and perceptions systematically. The Netherlands partner undertook sample surveys of users, and further user input was acquired through an Expert User Group. A range of reports emerged from the
project, which are accessible at http://projects.fnb.nl/download/default.htm#Testlab. A preliminary stage account of the project was provided in a journal article by Tucker (1997).

**General Overviews and Users**

The Canadian National Institute for the Blind undertook a comprehensive investigation into the needs of visually impaired people in a two year study entitled *The Needs of People in Canada Who Are Blind or Visually Impaired and Implications for Policy and Programs*. The study used focus groups, interviews, and surveys in order to gather information on the challenges associated with living with vision impairment and the adequacy of the support provided by social and rehabilitation agencies. It involved some 500 people, including visually impaired adults, parents of visually impaired children, ophthalmologists and optometrists, rehabilitation agency service providers, and teachers of students with visual impairments. The outcomes of the study were shared with key stakeholders who were able to influence policy and the delivery of support. The study explored a range of issues, including income levels, employment, education, and social integration of visually impaired people, as well as the services provided and required to fulfill unmet needs. Access to information including libraries, the Internet, and e-mail was also covered. A significant outcome was a recommendation to “integrate an accessible library service into the standard library system.” A full report of the investigation (Canadian National Institute for the Blind National Research Unit, 2005) is available, and an executive summary appears on the Web at http://www.cnib.ca/eng/research/publications/unequal-field.htm.

A study of information seeking by visually impaired people was the subject of a research project by Information and Telecommunication Needs Research (ITNR), a consortium based in two Australian Universities (Williamson, Schauder, & Bow, 2000). It cast some valuable light on why information is needed as well as how it is accessed. The role of the Internet was also explored. The specific research questions addressed were what are the information needs of sight-impaired people; in what ways are those needs being met; what is the role of the Internet in meeting information needs; and what are the barriers to the use of the Internet? The authors described the work as an ecological study because it focused very much on the information needs in people’s everyday lives. Evidence was gathered through a combination of focus groups and interviews that included both urban and rural participants. This was then supplemented by three very informative case studies. The predominant information needs identified were those covering health and finance matters. A particular concern that emerged related to the cost to individuals of both acquiring IT equipment and keeping hardware and software up to date.

Another example of asking visually impaired people directly what they
need and do is a survey undertaken by the Library and Information Statistics Unit (LISU) at Loughborough University in the UK with support from Share the Vision (Davies, Wisdom, & Creaser, 2001). Over 580 visually impaired people were surveyed through structured interviews. The methodology also featured a seminar to share preliminary results with agencies concerned with visually impaired people and to acquire additional information regarding service provision and demand. The project claimed to break new ground in the UK as there had never before been a national study on such a scale that examined library services and related information providers for visually impaired people from the users’ perspective. Volunteers to participate in the survey were enlisted through publicity directed at support agencies, newsletters, and Internet newsgroups. Evidence was gathered on visually impaired people’s preferred formats for accessing information and on their use of information technology. Detailed information was also gathered on visually impaired people’s experiences with public libraries as well as other specialized agencies such as the National Library for the Blind (NLB), the Royal National Institute of the Blind (RNIB) Talking Books service, the Calibre Cassette Library, and the Talking Newspaper Association of the UK (TNAUK). The results indicated that, in general, services received very positive responses from current users in terms of overall client satisfaction. Areas where scope for improvement was identified included publicizing and promoting services to potential users, retaining users, and regaining lapsed users together with user consultation and communication.

This article has sought to confine itself with one or two exceptions to work examples or work reported since 2000. Project LIBRA, undertaken by Peter Craddock, justifies its inclusion because it represents a significant study of provision and use in the UK, and it includes an extensive series of case studies drawn from interviews with visually impaired people as part of its methodology (Craddock, 1996). This was not the first study undertaken by Craddock; it built on earlier work. The study included a survey of library provision and a survey of equipment vendors, as well as the selection of case studies noted above. A considerable amount of evidence was assembled regarding the variety of provision then available in public libraries as well as the activities of a range of visually impaired users.

**Research and Visually Impaired People’s Needs: What Next?**

It is a truism that researchers always claim that “more research is needed.” By definition they are seekers after the knowledge and enlightenment that reliable evidence holds out the promise of providing. In the case of understanding visually impaired people as information users, it may be argued that the quest for more and better information is justified. New technology, the rediscovery of social imperatives for inclusion and
equity, the greater emphasis on information as a driver for cultural and material progress, and an aging population with more visually impaired people all point to the need for research. That research, in many cases, has to be more rigorous with larger and more representative sample sizes and sharper, replicable methodologies, although this is not to discount useful small-scale local investigations completely. Also needed is better dissemination of the studies that do exist—especially those undertaken at a local level—so that more library policy makers and managers can draw on the information.

More has to be discovered about people’s preferences for service delivery and information content and their perceptions and experiences of what is offered. Why do some visually impaired people give up using libraries? Why do some never start? Do those that use libraries get what they want, at least most of the time? Significant improvements in service can sometimes be achieved with small changes in delivery. The application of techniques that compare what visually impaired users expect with the reality that they perceive through gap analysis, in the way that Libqual does, are worth exploring. For inspiration the Web site is worth consulting: http://www.libqual.org/.

Moreover, the opportunity exists to explore in greater depth not only what users need and do but also how libraries and information change their lives. Case studies present an avenue for discovery, and soft social indicators offer another tool to pursue these goals (Welsh European Funding Office, 2003). In the UK there are the beginnings of a portfolio of mechanisms that address impact assessment for public libraries, though they are far from perfect. They are centered around shared public service ideals and priorities, including raising standards across schools; improving the quality of life for children, young people, families at risk, and older people; promoting healthier communities; and creating safer and stronger communities. Further information is available through the UK Department for Culture, Media, and Sport Web site. http://www.culture.gov.uk/libraries_and_communities/. In the UK the supermarket chain Tesco has maintained its market lead by knowing more about its diverse customer base than anyone else; it is perhaps time for libraries to follow suit.

References
Eric Davies, MA, PhD, FCILIP, MCMI, FRSA is director of LISU, a research unit at Loughborough University focusing on performance assessment and related management issues in information and cultural services. He is also a member of the faculty in the Department of Information Science at Loughborough. His experience of professional practice includes over twenty-five years in academic library management as well as work in public libraries and special libraries. He is currently group councillor and vice-chair of the Library and Information Research Group of the Chartered Institute of Library and Information Professionals (CILIP). He also chairs CILIP’s Policy Development Committee. He is a corresponding member of the Standing Committee of the International Federation of Library Associations (IFLA) Statistics and Evaluation Section and a member of the editorial board of Library Management. He has managed a range of projects and consultancies, including some undertaken for Share the Vision and for the Royal National Institute of the Blind.
Serving the Blind and Physically Handicapped in the United States of America

Frank Kurt Cylke, Michael M. Moodie, and Robert E. Fistick

Abstract
Since the early 1930s federal legislation has enabled the Library of Congress to offer free library service to blind and physically handicapped individuals resident in the United States as well as to U.S. citizens overseas. Technological changes in the program have mirrored and sometimes anticipated transformations and developments in the world of consumer electronics. Braille is now accessible over the Internet by means of specialized keyboards; audiobooks, originally cut onto rigid shellac 78-rpm disks, have progressed to flexible discs and a refined analog cassette technology that will in turn soon be replaced by digital flash-memory cartridges playable on efficient, reliable, lightweight, and portable machines. The National Library Service for the Blind and Physically Handicapped looks forward to the inauguration of its new digital system in 2008.

Introduction
One of the hallmarks of a civilized, humane society is the extent to which it cares for its people who have disabilities. Today, an estimated two million Americans are so visually impaired that they cannot read standard print. Another one million Americans have a physical disability that prevents them from holding a book. Because people receive up to 90 percent of their information through sight, blindness can result in reduced mobility, diminished employment opportunities, problems in performing tasks associated with daily living, and a general sense of isolation from sighted people.

Digital technology, however, now helps many of these people living in the United States and abroad to enjoy books and magazines in their
own homes through a remarkable system that produces reading materials in braille or on audiocassettes (talking books) and distributes them at no charge to the user. The Library of Congress’s National Library Service for the Blind and Physically Handicapped (NLS) has long produced full-length books and magazines in braille and recorded formats under a special provision of U.S. copyright law and with the permission of authors and publishers of works not covered by the provision. A network of regional and local libraries provides and distributes playback machines and reading materials by postage-free mail to eligible borrowers. In addition, braille books, magazines, and music materials are now available on the Internet through a system called Web-Braille.

Although the four-track cassette has been the accepted format for talking books (recorded to play at 15/16 inches per second [ips] for up to six hours of reading time per cassette), since the mid-1970s the increasing popularity and affordability of digital technology have spurred NLS to plan a digital alternative to cassettes that will greatly improve the sound quality of the narration and enable blind and physically handicapped readers to access reading materials in the same way as the sighted population. Many of the features of a printed book will be combined with the power of computers to give readers unprecedented flexibility and power. By 2008 thousands of titles will be available on digitally produced cartridges that are the size of a credit card and can hold a twelve-hour talking book.

The NLS program is available to a variety of users, from the mildly visually impaired to the totally blind, from children to the elderly (most patrons are over sixty-five), and from the physically able (though blind) to people dealing with multiple handicaps. In 2000 each user of the talking book program read an average of thirty to forty books and magazines per year, and many users read hundreds of titles. Total circulation exceeded twenty-three million books.

Working primarily with a specially created network of 134 cooperating libraries and the U.S. Postal Service, NLS quietly keeps nearly 750,000 current patrons supplied with a lifeline to the world of print information that they cannot otherwise access. NLS’s share of the federal budget—$54 million in 2006—is more than matched in kind or direct expenditures by the U.S. Postal Service and cooperating libraries and augmented by $5 million in volunteer repair work annually. As a result, the program’s reach is enormous. This article describes how this system evolved, now operates, and will continue pioneering new audio and braille technologies in the coming years.

**History**

Over the years a variety of private and public efforts have been made to help visually impaired people read. In the early nineteenth century in France, Louis Braille invented a forty-three-symbol system of touch read-
ing and writing for blind persons. In its simplest form, braille consists of arrangements of raised dots representing letters, numbers, and some punctuation marks, but most often today it includes contractions representing groups of letters or whole words. The use of contractions permits faster reading and reduces the size of braille books, making them somewhat less cumbersome. Historically, braille materials were produced by hand, using mechanical devices to press dots onto heavy paper.

Braille’s invention was not the only embossed system of printing, and it was not instantly adopted. A greatly modified version of raised impressions of print letters made by a series of closely spaced dots or solid lines, called Moon type, continued into the twenty-first century.

As early as 1829, the Massachusetts legislature founded the organization that later became the Perkins Institute for the Blind, which taught blind people to read braille. The New York Institute for the Blind followed in 1831. By the end of the nineteenth century, all but a few states had established such schools.

The Library of Congress first recognized the need for special services for blind individuals in 1897 and opened a reading room for them. Initially, forty braille books, braille typewriters, and other devices were brought together in the room, and musical events, lectures, and literary sessions were arranged. Patrons who had graduated from schools for the blind were encouraged to transcribe embossed books from dictation. In 1904 Congress authorized the free mailing of books for the blind. In 1912 Congress funded a professional staff position at the Library of Congress to serve the blind, and a collection of 2,000 braille books was made available for regular use. By 1925 the reading room, by then designated the Library of Congress’s Service for the Blind, was serving 2,400 readers across the nation. The collection had grown to 13,000 volumes, partly as a result of a 1913 act that required the American Printing House for the Blind (APH) to deposit with the Library of Congress a copy of every book for blind children produced by APH with federal funds. Commercial production of braille has never been feasible, and since 1879 APH had received an annual subsidy from Congress to serve as the official printer of textbooks for blind children.

Injuries to soldiers in World War I stimulated a greater responsiveness to blind adult readers’ needs. The Evergreen School for the Blind near Baltimore was established to serve blinded veterans who required vocational rehabilitation, and hundreds of volunteers offered to transcribe reading matter for the soldiers using a manual prepared by the Library of Congress and the Red Cross. By the mid-1920s the Evergreen Braille collection and the volunteer transcription service had been moved to the Library of Congress. The Library of Congress assumed full responsibility for volunteer transcription in 1943.

Much of the impetus for expanded services to the blind came from
nongovernmental organizations. The American Library Association (ALA), which had long been raising funds for press-brailing books that were needed in multiple copies, asked the American Foundation for the Blind (AFB) to conduct a survey of facilities in the United States and Canada for use by visually handicapped people. The survey, completed in 1929, found that although 60 to 80 libraries had sections for embossed books, they were expensive to produce and clumsy to use. The survey identified fewer than 10,000 active users and only 15 libraries with full-time dedicated staff.

In 1930 AFB, APH, the Braille Institute in Los Angeles, and other organizations for the blind called for action on the national level. The federal government, they argued, should provide free books for blind people. Legislation sponsored by Representative Ruth Pratt of New York and Senator Reed Smoot of Utah established a coordinated, national library service for blind people and gave the Library of Congress its first funds for the purchase of books for the blind. President Hoover signed the Pratt-Smoot bill into law on March 3, 1931.

Two important developments in services to blind individuals occurred in 1932. In London a milestone conference of American and British organizations adopted Standard English Braille. While both countries evolved differences in their Braille rules over time, this form of braille was the basis for the braille used in all English-speaking countries for decades to come.

Equally important, AFB established a laboratory for the development of “talking books.” Within a year, AFB had produced a long-playing (33-1/3 rpm) unbreakable phonograph record and a machine on which it could be played. The average book required eight or nine 12-inch records, and the needle on the playback machine had to be changed with each side of a record. In 1935 Congress raised its annual appropriation for the Library of Congress’s services for the blind from $100,000 to $175,000, and the first 157 print volumes were selected for recording as talking books for blind readers. To mark the bicentennial of George Washington’s birth, the first book ordered was Woodrow Wilson’s biography of Washington. Among the other titles chosen were Chaucer’s *Canterbury Tales*, Carl Sandburg’s *Abraham Lincoln: The Prairie Years*, Victor Hugo’s *Les Misérables*, and Pearl Buck’s *The Good Earth*.

Free library service and equipment were part of the program from its beginning in the 1930s, following the model established by Benjamin Franklin in the eighteenth century. Use of talking-book record players and all successor playback machines has remained free ever since. The Library of Congress appointed AFB as its agent to supervise both the manufacture and the distribution of the machines, which were made by the Works Progress Administration (WPA). AFB also produced most of the records and founded *Talking Book Topics* to announce new titles.
NLS services, originally limited to providing the written word to blind adults, expanded in 1952 to include books for children, in 1962 to provide music materials, and in 1966 to include service to people with other physical impairments that prevent the reading of standard print. A $1.5 million supplemental appropriation from Congress in 1966 allowed NLS to increase the number of recorded titles produced by 25 percent and to increase the number of talking-book machines purchased from 20,000 to 40,800 that year. Over the next decade and a half the number of users more than tripled.

Meanwhile, the playback machinery for talking books was constantly evolving. In 1965 the AE-1 talking book machine with a three-speed motor was introduced. Three years later the first transistorized, lightweight talking book machine was introduced. Standard cassettes were first distributed in 1969, and the first 1-7/8 and 15/16 ips cassette machines began service in 1971. By 1973 all discs were recorded at 8-1/3 rpm, and a proprietary cassette machine prototype was developed and modified for distribution. In 1981 the first C-1 cassette player (15/16 ips, four-track format) was produced. A simplified machine appeared in 1986, and in 1992 a combination talking-book machine and cassette player was produced. Now, new digital equipment will improve sound quality, enable users to read an entire book without manipulating the equipment, and enhance users’ ability to skim text and insert bookmarks.

NLS selects books for its program on the basis of their appeal to a broad audience, and all publications are produced in unabridged format. The objective is to provide material on a wide variety of subjects and at different reading levels, just as the typical public library does. Bestsellers, classics, biographies, fiction, mysteries, romances, westerns, and how-to books are in great demand. Each year approximately 2,000 titles are produced in quantities of 950 copies of each. Potential borrowers learn of these new materials through two bimonthly publications: Braille Book Review and Talking Book Topics. Through the International Union Catalog, now available on the Web, every user has access to more than 423,000 titles, incorporating the collections of NLS, six other cooperating countries, and five other U.S. agencies and foreign collections.

More than seventy magazines are now available on audiocassette and in braille. Among the more popular choices are U.S. News and World Report, National Geographic, Consumer Reports, Good Housekeeping, and Sports Illustrated. Issues of most magazines are mailed to readers at nearly the same time they appear on the newsstand. The NLS Music Section now offers the most comprehensive music collection in the world for blind and handicapped readers. It includes an extensive collection of music scores and textbooks in braille and large print, music appreciation cassettes, and instructional cassettes for numerous instruments.
The NLS network has fifty-seven regional libraries, at least one in every state except Wyoming and two each in some populous states. The District of Columbia, Puerto Rico, and the Virgin Islands also have regional libraries. Regional libraries may serve readers directly or through nearly eighty subregional (local) libraries. In March 2001 the regional library in Cincinnati celebrated 100 years of service. Libraries in Chicago, Philadelphia, and Pittsburgh, the Braille Institute in Los Angeles, the New York Public Library, and the Perkins School in Boston all have large, long-standing collections.

In addition, NLS has become a center for materials of all types relating to persons with disabilities and serves as a national clearinghouse for information regarding issues related to blindness and physical handicaps. Institutions and agencies whose clientele might be expected to include blind or physically handicapped persons—such as hospitals, retirement homes, nursing homes, and rehabilitation centers—also are eligible to use NLS services.

Readers borrow cassette playback equipment through the libraries, and over the years a variety of groups have kept the machines in good repair. Since 1960 the TelecomPioneers of America, a nationwide network of volunteers who are current and retired telephone employees, has repaired and adjusted talking-book machines and cassette players virtually free of charge. General Electric Elfun, a like-minded network of retired electrical workers, also has contributed immensely to keeping NLS machines running smoothly. In some communities the members have also delivered and demonstrated how to use machines to new readers.

Volunteers have long been an essential part of the services provided by NLS and the regional libraries. NLS provides technical training for volunteers and for network libraries. Today, some 4,500 volunteers are involved in the production of materials (tape narration, monitoring, reviewing, and duplicating) and the transcription, proofreading, and labeling of braille. Another 500 volunteers are involved in circulation and maintenance (including inspection to make sure patrons receive complete books in good condition). NLS offers correspondence courses leading to certification in braille transcription, music and mathematics braille, and braille proofreading.

A 1996 amendment to the copyright law, introduced by Senator John H. Chafee, provides that groups producing specialized formats for the blind no longer have to gain permission from the copyright holder to begin production of nondramatic literary works.

**Web-Braille**

Raised type has been a cornerstone of programs for blind people since the inauguration of such programs. Although the majority of NLS patrons
use talking books, there is a strong demand for materials in braille. An online system called Web-braille provides a new means of accessing NLS materials.

NLS staff first proposed the idea that led to the development of the Web-braille system in 1997, as many blind people were becoming familiar with the Internet. The advantages of offering braille material on the Internet are obvious: a user needing immediate access to specific information contained in an online braille book can obtain it in a matter of minutes, without waiting for the mail or dealing with bulky volumes. After a successful pilot test, NLS decided to make Web-Braille a permanent part of its program. Initially, Web-braille users could locate books only by searching a series of pages that simply listed the first 2,600 titles mounted on the system. Users can now consult the NLS online catalog to search by title, author, or other keywords among books available in Web-braille. More than 7,200 book titles were available as of 2005, and new titles are being added at the rate of about 40 per month. To access the latest titles, users can browse the online version of the bimonthly *Braille Book Review*, locate a title of interest, and select the volume they want to download. In May 2001 all NLS-produced braille magazines were added to Web-Braille.

Web-Braille represents another element in the overall movement toward enhancing braille literacy among blind persons—a movement that is endorsed by patrons and librarians alike. In particular, schools have applauded the new system because it allows everyone in a class to access the same book at the same time.

**Talking Books**

Most visually handicapped people lose their sight in middle age or later and comparatively few of them learn to read braille proficiently because the tactile sense diminishes with age. As a result, the talking book has overtaken braille in popularity. The talking book program was inaugurated in 1934, and within a year twenty-seven titles were being distributed through twenty-four regional libraries nationwide. Among the first talking books were the Bible, historical documents such as the Declaration of Independence and the Constitution, Shakespeare’s plays, and a variety of fiction. Today, the collection boasts books in fifty-five languages. Registered borrowers learn of talking books newly added to the collection through the bimonthly *Talking Book Topics*. And of course the International Union Catalog, mentioned above, gives every network library online access to the entire NLS book collection and to the resources of other cooperating agencies in the United States and abroad.

From its beginnings in the 1930s, the talking-book program pioneered technological changes, from phonograph to open-reel tape, to cassette, and soon to digital format. At one time NLS developed a lightweight solar panel for use by patrons in areas without electricity.
Among the more frustrating features of early talking books was the fact that the normal recorded speech rate of 150 to 175 words a minute is too slow for many users because it is about half of the normal reading speed. In response, variable speed controls were developed to permit users to speed up discs and tapes without distorting the sound.

Today NLS produces approximately 2,000 talking books in 2 million copies and 45 audio magazines in 3 million copies a year on specially formatted cassette tapes. Both because of the cost of replacing some 750,000 cassette playback machines with digital players and of replacing some 20 million cassette book copies with the new technology, and because of a desire to cause minimal disruption to users, NLS assumes that the current four-track, 15/16 ips cassette system will continue in use for some time after the digital system is introduced.

Development of the DTB System

Development of the new digital talking-book (DTB) system has been constrained by the four core concepts that shape all planning at NLS. The core concepts are that the service must remain free for every eligible user; there must be a high degree of user involvement; access to NLS materials must be restricted to eligible users to protect copyrights; and the focus must remain on the users’ reading needs. Consideration of users’ needs, for example, has prevented NLS from embracing technology such as CDs, which are considered to be too fragile to hold up under continued use.

Development of an acceptable DTB system for NLS has also posed a series of technical challenges, including establishing a standard, designing a player, and creating a digital collection.

Establishing a Standard

In the mid-1990s, NLS embarked on a program to design the most practical, cost-efficient digital talking book. The program involved twenty identifiable steps, including using a personal computer to simulate a DTB, developing a computer-based life-cycle cost analysis tool, developing relevant software, and constructing a prototype player. The first step was to define and prioritize DTB features and embody them in a standard.

After more than four years’ work by a committee that included representatives of seven countries, the National Information Standards Organization (NISO) approved a standard for a digital talking book in December 2001. NLS chaired the committee, created and managed work groups, and wrote much of the final document. Blind and visually impaired users, who were heavily involved at every stage, also approved the standard.

The standard permits the creation of digital talking books that range from a novel to a complex reference work, and it gives users flexibility in how they use talking books. Most will want a recreational reading experi-
ence while others will require more sophisticated capabilities, including the ability to navigate rapidly and flexibly and to set bookmarks.

**Designing a Digital Player**

In 2001 NLS and the Industrial Designers Society of America (IDSA) sponsored a contest for the design of the exterior of a digital talking-book player. NLS provided a list of features sought in the player, and students at fifty-five IDSA-accredited schools were invited to participate for cash prizes. Entries were evaluated with respect to the principles of universal design and features specific to an effective digital player, such as accessible, distinctive controls and provision for a directional speaker. The design also had to be compatible with devices such as mouth sticks and remote controls that are used by some physically handicapped people. Entries were also judged in terms of creativity and ingenuity.

In June 2002, 6 judges met at NLS to evaluate 146 submissions from 28 schools around the country. The $5,000 first prize went to a senior at the University of Bridgeport, Lachezar Tsvetanov. His design and those of other top contestants included creative ideas that were considered for incorporation in the player that NLS is developing.

**Creating a Digital Collection**

Because NLS has been experimenting with digital recording systems for a number of years, the staff has come to understand the challenges of the digital domain. All three studios in the NLS complex have been outfitted with digital recording equipment, and staff members have been trained in digital technology. NLS contractors, who record 95 percent of the books produced annually, were required to record at least 10 percent of their output digitally in 2002, 50 percent in 2003, and 100 percent in 2004.

In 2001 NLS chose an initial group of 1,000 titles in the current collection to be transferred to digital format. These represented a broad literary cross-section, with genres selected in proportion to their representation in the cassette collection. This process has continued with the goal of identifying 10,000 titles for conversion. Contractors have begun converting these books to digital format, and by 2008 digital masters of converted titles plus the newly recorded digital titles are expected to total 20,000.

**The Future**

As mentioned earlier, NLS will begin to replace its existing cassette-based talking-book system with the new system based on digital audio technology in 2008. NLS has chosen flash-memory technology for the circulation of digital talking books. This type of memory can be read from and written to thousands of times, and it does not lose its data when power is removed.

Unlike CD-ROMs, flash-memory cartridges are sturdy and reusable. Their toughness is matched by the ease with which their content can be
changed. Because cartridges can be rewritten over and over, NLS can move copies of a book into and out of circulation to meet patron demand without wasting materials. The flash memory cartridge attaches, physically and electrically, via a Universal Serial Bus (USB) connector, which can be found on any computer built since 1997. The NLS DTB player will also have this kind of connection.

Developed by Toshiba in the 1980s, flash memory has many advantages over other carriers of digital media such as tape or disc, while retaining most of those formats’ benefits. The use of flash memory as a DTB medium means that book players have no moving parts, so the machine will last longer. Also, the players will generate far less heat than a tape- or disc-based player and can get equivalent battery life from a smaller battery. Thus, flash-based players can be smaller, lighter, and faster to recharge.

Flash memory came into widespread use more than a decade ago and is found in electronic devices from microwave ovens to televisions and automobiles. The continuing drop in price of between 30 and 40 percent each year, driven by the popularity of digital cameras and portable digital audioplayers, promises to make the use of flash memory economical for NLS’s purposes by 2008. Although they sound specialized, flash memory cartridges can be mass-duplicated just like any other product. A bank of writers can copy a DTB to multiple cartridges simultaneously, or, just as easily, write a different book to each cartridge. Books can also be duplicated as needed, one at a time, by libraries.

USB flash drives can be purchased off the shelf at any electronics or office supply store. In order to reduce cost, the units used by NLS will be largely the same as these commercial products, with two key differences. First, the shell will be customized to carry a large print and braille label and fit snugly into the NLS DTB player so that the drive will appear like a plug-in cartridge, such as the type used with video game systems; and, second, the controller chip will be modified to prevent the alteration of the data stored on the device except by authorized agencies.

In early 2005 NLS contracted with Battelle, a leading technology innovation firm, to design and develop its digital talking-book system—which includes the playback machine, flash memory cartridge, and mailing container. Three subcontractors that are experts in disability and technology issues are using NLS patrons, library staff, and repair technicians to test the system components to determine whether the prototypes function properly in many real world situations and are lightweight, portable, and durable enough to survive years of heavy use.

Creating a made-to-order digital talking-book machine is a tough job, and some trade-offs will be necessary in the final design. Because a majority of NLS patrons are over sixty-five and many are newly blind, most read books in a linear fashion and have limited need for a sophisticated navigation system. In fact, this group would find a complex player frustrating
and thus prefer a more basic player. At the same time, blind children and younger adults also use talking books and may wish to take advantage of more sophisticated navigation features. A user interface designed solely for one of these groups will not meet the wants and needs of all patrons. Hence the challenge is to design machines that a variety of patrons can operate, that librarians are able to clearly explain, and that repair personnel are able to service. The key characteristics are usability (accessible design), portability—because patrons prefer smaller, lighter machines with a built-in handle—and ease of maintenance.

There are a number of subcontractors with different tasks. The National Federation of the Blind, whose 50,000 members make it the largest organization of blind persons in the United States, developed procedures to test the system prototypes with patrons of all ages. HumanWare, formerly VisuAide, a leader in DTB technology, is managing the tests and will develop the software for the player. The Trace Research and Development Center at the University of Wisconsin at Madison, which makes information technology and telecommunications systems accessible by people with disabilities, is testing prototypes with people who have a range of physical handicaps.

Focus groups in Baltimore, Boston, Cleveland, Clearwater, Florida, Los Angeles, and Madison, Wisconsin, were tested on operating the controls, wrapping the power cord for storage, and opening and closing the mailing container. They reviewed player and cartridge shapes, insertion methods, and button shapes and layouts. Users demonstrated that buttons had to be accessible in shape and layout and that built-in audio prompts to guide usage also were essential. Librarians wanted a simple interface and cartridge and packaging design that would make the book return process more efficient.

Unlike audio players aimed at the general consumer, the NLS system will use tactile features, color differences, and large print labels to help readers with various kinds of visual impairments to operate the machine. The goal is to have 60,000 playback units ready for use by NLS patrons by 2008, with additional players available in each succeeding year. Meanwhile, NLS is analyzing its current audiobook distribution process to determine what adjustments will be needed to accommodate its new digital talking-book system. Three new models have been evaluated, and the best suited will be designed to integrate with the distribution systems of regional and subregional libraries in the NLS network.

The three models under consideration included the current system, in which mass quantities of book titles are stored locally for easy access by librarians as they fill loan requests. The other two options were on-demand distribution through a central facility, which would duplicate DTBs as patrons request them, and a hybrid model that combines mass production
and on-demand duplication in proportion to patron requirements. Each option was reviewed for compatibility and ease of adaptation to current library systems. The hybrid model was found to be the most economical for NLS and its network libraries; however, the complexity of the transition will require the continued use of the mass duplication system for the first year or two of digital operations. Modifications to other aspects such as shelving and circulation will be considered as libraries continue to distribute books from their own facilities.

The new distribution system will provide a combination of personal service for patrons, timely book delivery, and accurate tracking of materials to reduce loss rates. It is also important that materials are used efficiently and that inventory is adequate to meet patron demand. Some books do not circulate often but are still important to have in the program. Rather than having such books take up shelf space in libraries across the countries, flash technology will permit copies to be made quickly when needed.

The history of services to blind and physically handicapped readers in America reflects not only a growing recognition that such people have the same interests, intellectual capacity, and ambitions as other members of society but also a determination that they should enjoy the same benefits. Systems to assist blind people have made tremendous strides since Louis Braille devised his tactile code early in the nineteenth century. The digital talking book and the Web-Braille system are the latest steps to assure that all may read. The overall goal of all technological advances, of course, remains the same: to make the reading experience more enjoyable.

Frank Kurt Cylke has been the director of the National Library Service for the Blind and Physically Handicapped, Library of Congress, since 1973. He holds a B.A. from the University of Connecticut and an M.L.S. from the Pratt Institute. Since 1949 he has served in various public, academic, and school libraries. Among his many awards and citations for distinguished service are the 1982 Francis Joseph Campbell Citation and Medal and the 1994 Joseph W. Lippincott Award, both from the American Library Association.

Michael Moodie is the former deputy director of the National Library Service for the Blind and Physically Handicapped (NLS), Library of Congress. Appointed to the position in January 2004, he is primarily charged with directing the transition of the audio program from analog to digital format. He joined NLS in 1974, becoming research and development officer in 1990. In that role he chaired the development of the ANSI/NISO digital talking book standard and researched the application of solid-state memory technologies to the NLS program. He holds a B.A. from Syracuse University and an M.B.A. from the Johns Hopkins University.
Robert Fistick is the special assistant to the director, National Library Service for the Blind and Physically Handicapped (NLS), Library of Congress, and was for many years head of the Publications and Media Section. He joined NLS in 1980 after twenty years in journalism as a newspaper editor and publisher and has altogether more than forty-five years of experience in public relations, publicity, marketing, and publications management. He holds a B.S. in communications from Cornell University and has pursued graduate study at the College of William and Mary.
Sharing a Vision to Improve Library Services for Visually Impaired People in the United Kingdom

DAVID OWEN

ABSTRACT
The United Kingdom has an unplanned, mixed library economy of services for visually impaired people compared with other developed countries. This article sets out the historical context within which this has come about; attempts made to improve these services since the creation of Share the Vision in 1989 via enhanced partnership working within and between the voluntary and public sectors; and practical measures to achieve this and campaigning work to include consideration of the needs of visually impaired people within mainstream services and to persuade the UK government to adopt a more proactive role. It sets out an ambitious vision statement for library services for visually impaired people in the UK that has still to be achieved.

INTRODUCTION
Depending on the nature and extent of their sight impairment, all visually impaired people throughout the world need to make adjustments to normal reading methods in order to have access to content. For some of these people it is possible to make self-adjustments that permit them to carry on reading, most obviously enhanced illumination and a magnifying glass. However, the ageing process dictates that these people, like the remainder of visually impaired people, are primarily dependent on the adjustments that society makes to enable them to carry on reading later in life or, if born blind, to commence reading in the first instance. The provision of alternative format reading materials and the exploitation of information technology are the obvious ways of removing the personal and societal barriers imposed by their sensory impairment.

LIBRARY TRENDS, Vol. 55, No. 4, Spring 2007 ("Library and Information Services for Visually Impaired People," edited by Helen Brazier and David Owen), pp. 809–829
© 2007 The Board of Trustees, University of Illinois
In all countries the major social agency responsible for providing access to content is the publicly funded library, but not all countries have adopted a national, planned structure for addressing the special needs of visually impaired and other print disabled people. Other articles in this issue set out the approach adopted in the United States and the Scandinavian countries. This article attempts to outline how publicly funded libraries in the United Kingdom (UK), another developed country, have so far failed to address the needs of visually impaired people in an adequate manner appropriate for their special circumstances and comparatively recent attempts to improve this situation.

**The Historical Context**

Public libraries in the UK funded from local rates were founded from 1851 onwards under the terms of the Public Libraries Act 1850, which permitted municipalities with a population of over 10,000 to vote whether to spend a ½d rate (“the halfpenny rate,” equivalent to 1/480th of the current £ sterling) to establish a library building but not to buy books. The honor of establishing the first library under these provisions went to the ancient city of Winchester in Hampshire, which had once been the capital of England; but, not surprisingly, the major northern cities of Manchester and Liverpool quickly followed suit in 1852. Kelly records in his *History of Public Libraries in Great Britain 1945–1975* (1977) that another thirty-nine authorities established public libraries over the next twenty years, but only one was in a London borough.

In the meantime, Thomas Rhodes Armitage had established the British and Foreign Blind Association for promoting the education of the blind in 1868. This organization became the Royal National Institute of the Blind (RNIB)—the leading charity in the United Kingdom for all matters relating to blind people. Armitage was convinced that the alleviation of the destitution of most blind people was dependent on their being able to be educated. Armitage recognized the need to have a standardised embossed print for the production of reading materials and set about investigating what was the most appropriate method. Today most people associate blind readers with the Braille system invented in France by Louis Braille in 1827 when the first Braille book was produced. However, in 1868 there was a multiplicity of alternative systems. The Moon system, invented by Dr. William Moon in 1845, remains in use to this day, but Thomas (n.d.) lists at least nine other systems in existence in 1868.

Armitage decided that a committee of highly educated blind men should determine which system of embossed type should become the standard. The guiding principle was that they should be conversant with at least three of the systems and have no pecuniary interest in any. In May 1870 the committee announced: “It was unanimously decided that the Braille ought to be adopted as the written character, though the members
present were equally unanimous that something better might be devised for the printed character, and that Moon’s type approached the nearest of any of the existing types to which is needed” (as cited in Thomas, n.d.). This historic decision shaped the future provision of library services for blind people in the UK and elsewhere.

As is typical in most matters charitable, the key factor is the determination of one individual to address a problem. As Braille books became more available, Martha Arnold, herself blind, decided to establish the Lending Library for the Blind in her London home in 1882. As membership grew it was realized that the service could not be solely dependent on volunteers to produce and administer the collection of Braille books. In 1898 the Lending Library was registered as “The Incorporated National Lending Library for the Blind” (now the National Library for the Blind or NLB) and employed paid staff for the first time.

At this stage in the development of public libraries Kelly notes,

The provision of books for the blind was a matter of concern in many places. Most libraries provided and issued the books themselves, but some preferred to assist local institutes for the blind. Bradford, for example, established in 1912 a branch for the blind in the Royal National Institute for the Blind, which transferred its own stock to the library’s control. Manchester, which at one stage employed two or three blind copyists continuously in the making of Braille texts, eventually transferred its library to the Manchester Blind Aid Society and agreed to subsidize the Society’s work. In 1918 the Society was reconstituted as the Northern Branch of the National Library for the Blind and it was this latter body, founded as a voluntary association in 1882, which gradually assumed the major responsibility for the supply and distribution of books for blind readers. (1977, p. 190)

 Accordingly, within fifty years of the establishment of publicly funded libraries in the UK, the trend had begun whereby the special needs of blind people were detached from mainstream provision used by the remainder of the population. Whatever the logic and merits of such arrangements, the dependency of blind people on charitable efforts to provide basic services was being instituted at an early stage.

Indeed, this separation was reinforced by the seminal Kenyon Report of 1927, which had been charged “to enquire into the adequacy of the library provision already made under the Public Libraries Acts, and the means of extending and completing such provision throughout England and Wales” (as cited in Kelly, 1977, p. 234). By this time the NLB in Westminster had 100,000 volumes and 10,000 readers, whereas only 41 of several hundred public libraries had their own special collections. Accordingly, Kenyon recommended that “any new scheme would probably best take the form of a subscription to the National Library and the delivery of books from the National Library direct to the blind reader or to the institution for the blind which the blind reader attends” (as cited in Kelly,
This recommendation was adopted as Kelly records that in the 1930s "few libraries now maintained a special collection of books for the blind, the general practice being to subscribe to the National Library for the Blind. The operations of this continued to expand, and the enlarged and reconstructed building in Westminster which was completed in 1935 had accommodation for over a quarter of a million volumes (1977, p. 288). At the same time library services for blind people took a momentous leap forward with the launch of the RNIB's Talking Book Service in November 1935. The motivation for introducing this new service was to address the needs of the many men blinded in the First World War who could not read Braille. The original system was based on recording books onto long-playing records that were played on standard gramophones, and it quickly became popular. Within a year, 2,639 books were available to the 966 members who had been sent gramophones, according to Sandlerik (2005). By the 1960s, Kelly states in relation to public libraries,

Concerning provision for blind readers there is by this date little to be said. For the most part such readers now secured their books direct from the National Library for the Blind. A few public libraries, mainly in the north of England and in Scotland, operated a service with bulk supplies from the National Library; fewer still now held their own stocks. For blind people who found difficulty in reading by touch an invaluable alternative was provided by the British Talking Book Service for the Blind, which was established in 1935. (1977, p. 395)

In little over 100 years public libraries had totally handed over responsibility for library service provision for blind people to the two main national charities in this field. The Public Libraries and Museums Act of 1964 places a statutory duty on every public library authority to provide "a comprehensive and efficient service for all persons desiring to make use thereof" (Great Britain, 1964). It did not go on to state, "except if you are blind in which case you must depend on the efforts of two charities to raise donations to meet your special needs." Similarly, the British Library Act 1972, which established the new British Library from various existing agencies, does not mention any responsibility to address the needs of blind and other disabled people. Clearly, the British had no intention of following the U.S. model, but public libraries had, in the meantime, been forced to readdress the needs of visually impaired people because of two important developments.

In 1964 Dr. Frederick Thorpe published the first large print books specially designed to meet the needs of readers with low vision. These books were specifically targeted at the library market because of their comparatively high production costs. If the primarily older age group for whom they were intended could not afford them, it was essential that public libraries should purchase them, and the Ulverscroft Large Print Group has followed this marketing plan to the present day. Consequently, older
readers whose sight was deteriorating came to expect their local public library to assist them to carry on reading. They also made use of the increasing level of recorded music available in public libraries, and as the commercial publishers slowly caught up with RNIB’s appreciation of the potential of talking books, this alternative format also became a relevant component of public library audio collections.

In 1974 a third major voluntary sector agency was established. The Calibre Cassette Library, as ever, was an attempt by a determined individual, Monica Poels, to meet a perceived need by creating a simple home loan service of recorded books that utilized basic and familiar domestic playing equipment ("Monica Poels," 2006). Despite entering a market already supplied by both the RNIB’s specialized service and the public library provision of collections of commercial audio books, Calibre was quickly able to establish its niche in the market and has continued to flourish ever since.

For all of these agencies the 1980s brought the challenge of new information technology developments, which presented public libraries with a new opportunity to increase their newly established relevance to visually impaired users. The Kurzweil Reading Machine was the dawn of a new age of assistive technology that would necessitate a reevaluation of how public libraries could and should address the needs of visually impaired people. Within a mere twenty years we had moved from “there is little to be said” concerning public library provision for blind people in the UK to there being a lot of opportunity to enhance the relevance of public library services.

ATTEMPTING TO SHARE A VISION

From the above account it is possible to summarize the position of library service provision for visually impaired people in the UK in the 1980s. It was very much a mixed library economy of producers and service providers. The three main voluntary sector organizations, RNIB, NLB, and Calibre, were both national producers and library service providers of Braille, Moon, large print, giant print, and audio books. In addition there were hundreds of smaller charities producing alternative format reading materials. The public libraries were primarily suppliers of large print and audio books to local residents. The commercial sector comprised a range of producers of large print and audio books, although the latter were not primarily intended for visually impaired people but for the general public. Furthermore, the major commercial supplier of large print books, Ulverscroft Large Print Group, had been put in the ownership of the Ulverscroft Foundation in 1972 by its founder, Dr. Frederick Thorpe. Thorpe’s intention was to use the group’s profits to “relieve and assist, and to provide treatment and education for sick or handicapped persons and in particular persons suffering from defective eyesight” (Ulverscroft Foundation, n.d.).
It is fair to state that there was not at that time a planned and rational national infrastructure for the provision of library and information services for visually impaired people, and there was most definitely no policy guidance or investment from the central government. As ever in this area, one very determined individual decided to try to improve matters. In 1986 John Godber, now a senior manager at RNIB, visited the United States as a Churchill Fellow. Having studied the services of the National Library Service for the Blind and Physically Handicapped (NLS) in Washington and its relationship with the New York Public Library, which provided an extensive range of Braille, audio books, and Perkins Braillers for individuals to use, he compared this with his frustrations as a blind man attempting to use his own local public library in England. Realizing that he could not hope to achieve the level of central government funding needed to replicate the partnership between the NLS and its regional and local network, Godber nevertheless determined that it was time to address the detachment between the voluntary and public sectors in the UK and to promote partnerships working in the interests of visually impaired people.

On his return to the UK Godber contacted the Library Association (now the Chartered Institute of Library and Information Professionals, or CILIP) to seek advice, and he was referred to Peter Craddock. Craddock was a lecturer at the Department of Information Studies at Queen’s University, Belfast, who had a particular interest in this area and had published *The Public Library and Blind People: A Survey and Review of Current Practice* in 1985. Craddock had concluded that “There is a pressing need for some form of composite national body in the area of library and information services for the blind or print-handicapped generally which can provide a focus for national initiatives in areas such as the co-ordination, utilisation and promotion of resources and services and in the support of services at local and regional level” (p. 71). Godber decided Craddock could provide the professional library credibility and expertise he needed to develop his vision, and in 1989 Share the Vision (STV) was established by RNIB with Craddock as director.

Godber and Craddock were agreed from the outset that STV should not be viewed as an agency of RNIB but had to attempt to embrace the involvement of as many relevant partners as possible. The first meeting of the steering committee did not take place until May 1992 and was attended by representatives of the Federation of Local Authority Chief Librarians (later to become the Society of Chief Librarians, or SCL), the British Library, the Library Association, NLB, and two public librarians specializing in services for visually impaired people as well as RNIB staff. STV became a company limited by guarantee in 1996, and its stated aims and objective were “To improve the quality and availability of library and information services and products which provide for the reading and information needs of visually impaired and other print disabled people” (STV, 1996).
Today its membership is comprised of RNIB, NLB, Calibre, ClearVision, and the Talking Newspapers Association from the voluntary sector and the British Library, CILIP, the Library and Information Services Council: Northern Ireland, the Scottish Library and Information Council, the Society of Chief Librarians, and the Society of College, National, and University Libraries from the public/professional sector. The Museums, Libraries, and Archives Council (MLA) and its Welsh counterpart, CyMAL, have observer status on STV’s board as Non-Departmental Public Bodies. Godber’s vision of a voluntary, public, and professional sector partnership across the United Kingdom has been achieved.

Much was achieved by STV between 1989 and 1997 when Craddock retired. In terms of promoting interest in and information about services for visually impaired people, the launch of the quarterly *STV News* in 1991 proved very successful with over 200 subscribers. *STV News* continued until issue 39 (winter 2001), when RNIB could no longer afford the level of subsidy required. Craddock also organized a series of STV Roadshows around the UK, which were successful in promoting STV’s objectives, bringing agencies and users together at the local and regional levels, and forging new partnerships. Craddock was also successful in being invited to address professional and voluntary sector seminars and conferences.

The first major publication from STV was the *Directory of Transcription Services: Braille, Tape, Moon and Large Print* in 1994. This was based on a comprehensive survey of alternative format producers in the UK and was designed to provide a practical guidebook for librarians and other service providers. It was published in loose-leaf format in the hope that it would be regularly updated, but the actual time commitment and costs incurred by RNIB made this prohibitive. A solution to this problem was to be achieved a decade later via the Revealweb Collections Register.

In 1996 Craddock published *Project Libra: The Provision and Use of Reading Aids for Visually Impaired and Other Print Handicapped People in UK Public Libraries*. This was based on a survey of 130 public library authorities and was designed to identify ways in which reading aids could be better used. His research found that the majority of public library authorities were making such provision and that the main factors that influenced the actual degree of use were user awareness of their availability, the range and type of aids provided, access features, and the existence of community and support systems. This research project provided practical guidance for libraries attempting to enhance their relevance to visually impaired people.

Practical guidance of this sort was particularly welcome at this time because of the Disability Discrimination Act, which was passed on November 8, 1995. This act was to have a staged implementation over the next few years, and one of its requirements was that service providers had to make “reasonable adjustments” to permit access by disabled users. Many people
assumed that this meant the provision of ramps for people in wheelchairs, but STV was quick to point out to colleagues that reasonable adjustments meant much more, including the provision of reading aids, assistive technology, and alternative formats. The DDA, as it became popularly known, was to become a major spur for public library authorities to address the needs of visually impaired and other disabled people.

A major development in assisting this to come about was the publication by STV and the Library Association of Library and Information Services for Visually Impaired People: National Guidelines (Machell, 1996). For the first time in the UK, library staff in all sectors had access to a comprehensive and authoritative set of guidelines that covered equality of access; physical access to buildings and services; staffing; service provision; service delivery; client groups; reading resources; reading aids and equipment; information; and promotion and publicity. The guidelines were compiled by Jean Machell, who was a library consultant specializing in services to disabled people and had attended the early meetings of STV’s national steering committee in 1992. Machell’s guidelines were well received and have stood the test of time.

Throughout the early 1990s RNIB, with the assistance of STV, had begun working toward the establishment of a National Union Catalogue of Alternative Formats (NUCAF) of its own extensive holdings and those of other agencies. This was the essential building block or cornerstone for the creation of a national infrastructure of library services for visually impaired people. In order to extend its availability to mainstream library settings, Craddock negotiated for its then 60,000 records to be included in the Unity System, a national database of 10 million records of library holdings covering most parts of the UK, except London and the southeast and West Midlands regions of England. Accordingly, STV was able to utilize the Unity System to initiate a Pilot Interlending Project in the northwest of England, which involved volunteer visually impaired users of Lancashire, Manchester, and Tameside libraries. By providing access to assistive technology at workstations in all three sites, these users were able to make independent searches of the NUCAF and Unity databases to locate and request materials. This project formed the UK contribution to the European Commission–funded research project TESTLAB: Testing Systems using Telematics for Library Access for Blind and Visually Handicapped Readers. TESTLAB included projects in Ireland, Italy, Austria, the Netherlands, and Greece as well as the UK and led to service developments that have continued to this day in all of those countries. In the case of the UK, NUCAF and TESTLAB played a crucial development role in the later attempt to create a national infrastructure.

When Craddock decided to retire in 1997, the STV board reviewed its position and realized that it did not have the resources to continue operating in the same manner as it had from 1989. Pump-priming, one-off con-
tributions from the Ulverscroft Foundation and the Guide Dogs for the Blind Association had long been spent. In essence, STV was dependent on cash contributions from RNIB, NLB, and Calibre along with substantial in-kind support from RNIB. The board realized it could no longer afford to operate with a full-time director and decided to recruit a part-time executive director who would be expected to adopt a more campaigning and promotional role rather than concentrate on the practical service delivery and improvements role that had been pursued previously. Much had been achieved, but STV needed to change track.

The Long-Awaited Window of Opportunity

The author took up the post of executive director in May 1998, and within three months had an embarrassing form of luck that had avoided Craddock. The new Labour government, which had been elected in 1997, carried out a Comprehensive Spending Review, which resulted in each government department setting out its budget plan for the three years of 1999 to 2002 in August 1998. For reasons that were never made clear, the new Department for Culture, Media and Sport (DCMS) decided to take an annual £200,000 grant to RNIB for the production of Braille and transfer it to the Library and Information Commission (LIC) to improve library and reading services for visually impaired people. The LIC was the newly created body charged with advising the government on all matters concerning library and information services across government departments. Within three years it was to become part of the newly merged Museums, Libraries, and Archives Council, which holds the same responsibility today. We protested that this was not a meaningful investment of new money to achieve the social inclusion of visually impaired people but rather was “robbing Peter to pay Paul.” Nevertheless, we had to be pragmatic and attempt to ensure that the money was spent on a program that would further our objectives. As would be expected of any incoming senior library manager, STV had already commenced a major review of the status quo and was therefore able to present an initial analysis to the chief executive of LIC at a prearranged meeting in August 1998. Accordingly, STV was invited to present its analysis to the next LIC board meeting on November 26, 1998. As it was crucial to furthering STV’s objectives to secure LIC’s support, our analysis of the status quo at August 1998 had to be short and to the point. It included the following:

There are a whole range of services in this field, but they are not properly co-ordinated.
Unlike in other English speaking countries, our national library does not provide these services nor does it give any lead.
In typical British fashion, services have developed ad hoc to fill the needs not met by the British Library or public libraries.
For very many years voluntary agencies such as RNIB, NLB and
Calibre have provided these services and they tend to be format based (often as a result of the initiative of determined individuals).

Consequently, public library provision is variable although it has improved in the last 10 years. Nevertheless, there is no guarantee of minimum standards.

Copyright clearance is an unnecessary and time-consuming burden for all services providers in this field.

There is a huge lack of content; most publications are not available in an alternative format accessible to visually impaired people.

Even where alternative formats are available they are not included in the national bibliography so how do readers and library staff trace them?

That it is much more difficult for visually impaired people than sighted people to borrow the items they need in formats they prefer whoever may hold it. No national interlending arrangements are in place.

ICT provides a unique opportunity to dramatically improve access to services providing systems are designed from the outset to cater for the interests of visually impaired people. (Owen, 1998)

Following this presentation STV was invited to draft a three-year work program for LIC to commence in April 1999. We established a LIC/STV Joint Working Group and agreed on the following program to address some of the identified shortcomings:

- Developing and maintaining the National Union Catalogue of Alternative Formats
- Commission a metadata technical specification to improve the quality and coverage of the database
- Commence a retrospective conversion project to eliminate the backlog of data entries
- Enhancing ease of access to required materials for visually impaired people
- Develop a national interlibrary lending procedure for visually impaired people
- Develop a single-enrollment procedure
- Enhancing access to library-based ICT services for visually impaired people
- Working with local authorities to ensure best practice/best value
- Carry out a survey of current service provision in public libraries
- Produce a best practice manual for library staff
- Conate STV News to every Public Library Authority for one year
- Revive STV roadshows and executive briefings at an appropriate juncture
- Co-ordinating alternative format title selection

To reinforce our plans STV published a vision statement in issue 29 of STV News (Owen, 1999) that was also circulated directly to numerous relevant
organizations throughout the UK. We were attempting to win over hearts and minds to our cause, but we also needed to demonstrate that we could convert our work program into practical achievements, which would assist our vision to become more of a reality. The following is a summary of what has been achieved since 1998.

**Revealweb**

We commissioned the United Kingdom Office for Library and Information Networking at Bath University (UKOLN) to produce a metadata specification for an enhanced NUCAF and RNIB/NLB to investigate the extent of the retrospective conversion project required to make it comprehensive (Chapman, 1999). Ann Chapman of UKOLN has written extensively on the work involved in the development of what eventually became Revealweb: the National Database of Resources in Accessible Formats (Chapman, 2000, 2004, 2005). After much trial and tribulation, Revealweb was finally launched at the Public Library Authorities Conference in September 2003. At last we had a state-of-the-art, Web-based, comprehensive, freely available, multifunctional national database of alternative formats and a Collections Register of producers and suppliers. Today the database holds records for 113,360 titles for 192,000 items in different alternative formats, and the average number of monthly visits to the Web site is 35,000. Revealweb (at www.revealweb.org.uk) is indeed the cornerstone of our developing national infrastructure.

**Enhancing Access**

The former North Western Regional Library System (now Libraries North West) was commissioned to develop the national interlending system building on the work they had undertaken on the TESTLAB project; it quickly produced procedural documents that were circulated throughout the UK. As anticipated, demand to access alternative format materials via interlibrary loans from mainstream libraries has never been great because it is still the tendency for visually impaired people to rely on suppliers they know and trust. Hence the new system was christened Bee Aware (Libraries North West, n.d.) in order to encourage greater awareness by visually impaired people and the library staff who serve them. Another problem is that some library authorities remain reluctant to lend their audio books to other library authorities on behalf of their visually impaired users because of the perceived loss of income from a charged service. Such attitudes remain all too prevalent in the UK library scene despite the DDA and probably require a successful legal challenge under the DDA in order to change them overnight.

Similarly, it has not proved easy to establish a single enrollment form that can be used by visually impaired people to access all services whether in the public or voluntary sectors. Entrenched inward-looking attitudes are
the problem, and they do not enhance the reputation of libraries as being customer focused. STV is still working on this irritation but had much more success in enhancing access to library-based ICT services. Following a comprehensive tendering process a contract was awarded to HumanITy, an information technology–based charity, to produce a set of proposals on how this might be achieved (HumanITy, 2000). We were fortunate that Chris Batt, the LIC’s chief network adviser at the time (now the chief executive of MLA) took a personal interest, and HumanITy’s work helped to shape the design of the People’s Network, which was a major national initiative to establish Internet connections in every public library in the UK. Ever since, MLA has striven to ensure that its own information technology (IT) developments and those it sponsors are exemplars of accessibility.

**Promoting Best Value**

Second only in importance to Revealweb was our plan to produce a Best Practice Manual. Having produced a detailed specification of its contents, STV was pleased that its own chair, Linda Hopkins, agreed to undertake the formidable task of editing this publication, which contains seventeen chapters commissioned from the leading experts in their field in the UK. *Library Services for Visually Impaired People: A Manual of Best Practice* was launched at the British Library by the Minister for the Arts on November 28, 2000. It was published simultaneously in print, Braille, audio, and computer disk formats and on the NLB’s Web site. A printed copy was donated to every public library authority, university library, college library, national library, university library and information school, and regional library system in the UK. The LIC/STV message was quite simple: “now you have no excuse for not knowing what the issues are and how to address them.” The manual was well received and was updated as a Web version only for financial reasons in June 2002 (see [http://bpm.nlb-online.org](http://bpm.nlb-online.org)). Hopefully funds will become available to update it again because of the speed of modern development.

The Library and Information Statistics Unit (LISU) at Loughborough University was commissioned to undertake the survey of service provision in public libraries and published their report in March 2000 (Kinnell, Liangzhi, & Creaser, 2000). Their research was based on a desktop literature search and a questionnaire sent to all 208 public library authorities in the UK, which produced 141 responses (68 percent). Their major findings were that many authorities did not have a specific policy statement or a specific budget allocation for these services. Staff awareness training was inadequate and marketing of services was not carried out in an intelligent manner. As anticipated, this report proved the need for the Best Practice Manual, and ideally the research should have been repeated by now to ascertain whether STV’s activities have made any difference over the last six years.
STV also commissioned LISU in 2000 to conduct the first ever survey of the views of users, ex-users, and nonusers of library services for visually impaired people. As it is not possible to conduct a nationwide user survey of this target group by conventional methods, LISU had to devise an appropriate method to achieve an authentic sample frame. They conducted interviews with a representative sample of 582 people either face to face in different parts of the UK or by telephone. Their report, *Out of Sight but Not Out of Mind* (Davies, Wisdom, & Creaser, 2001), provided a mass of extremely useful feedback information for library managers in both the voluntary and public sectors when it was published in 2001. The most intriguing finding was that 23 percent of respondents claimed to use computers, of whom 64 percent had a computer at home. The advisory group for the project queried whether such a high percentage of computer users at that time indicated that the sample was steered toward younger people, but a recheck by LISU confirmed that the sample was representative. Clearly, if 76 percent of these computer users were using the Internet in 2000, there was tremendous potential for publicly funded libraries to provide services that were appropriate for their information needs, providing their Web sites were designed to be accessible in the first place.

STV was able to achieve its plan to conduct a series of roadshows/seminars in partnership with local authorities in different parts of the country, as well as a series of executive briefings in partnership with the Library Association and a special seminar for British Library staff. As anticipated, these are especially time-consuming events to organize for a part-time operation, but the cooperation and enthusiasm of the partner organizations ensured that they were uniformly successful.

**Coordinating Alternative Format Selection**

This was an ambitious project to test how many books are reproduced in alternative formats in the UK and to identify how the book selection techniques that had been developed to ensure that public libraries achieve best value might be applied to the voluntary agencies. The contract was awarded to Capital Planning Information, who published their report in April 2000. The headline finding from their report, which was to be much quoted in later years, was that of the 100,000 new titles published in the UK each year, only about 4,000 are reproduced in one or more alternative formats. As had been expected, the most commonly reproduced titles were in the popular fiction category, but it was disturbing to learn that children’s literature was very poorly represented. The report identified the lack of coordination between the voluntary agencies and the need for public investment to enhance the range of materials available. Experience indicated that this would not easily be achieved, but the main voluntary agencies—RNIB, NLB, and Calibre—set in train a series of actions to improve their coordination, which have continued to this day. In this they
were greatly assisted by the establishment of Revealweb, which is not only an authoritative database of which titles have already been produced in an alternative format but records which titles are planned to be reproduced by which agency to avoid unnecessary duplication of effort.

Another benefit of Revealweb is that it provided a basis to retest the availability of titles in alternative formats, and in 2004 RNIB commissioned LISU to carry out the research. *Availability of Accessible Publications* (Lockyer, Creaser, & Davies, 2005) confirmed the earlier CPI finding. Only 4.4 percent of the output of UK publishers between 1999 and 2003 was available in an alternative format. Part of the problem is that UK publishers’ output of titles increased from about 100,000 in 1997 to about 150,000 in 2005. The voluntary sector cannot hope to keep up no matter how successful their fundraising and production techniques, which makes it imperative that their book selection techniques are as sophisticated as possible.

**Other Activities**

While the period of 1999 to 2002 was project intensive, STV was involved in numerous other activities during that period that have continued since then to date. As stated earlier, the STV Board reviewed its plans in 1997 upon Craddock’s retirement and determined that it wished STV to adopt more of a campaigning and promotional role. Since 1998 STV has operated on the basis that it will represent the interests of visually impaired people in all relevant consultations, whether invited to do so or not. A review of STV’s annual reports since 1998 reveals that we have forwarded responses to 11 DCMS consultations; 9 to other national agencies; 7 to the European Commission; 6 to other central government departments; 5 to the British Library; 4 to MLA; 3 to House of Commons Committees; 2 to CILIP; and 1 each to the IFLA, Scottish National Executive, Welsh Assembly, Northern Ireland government, and Irish Library Council. This is a total of at least 52 submissions in 8 years. During the same period STV has provided papers at 37 conferences and seminars in the UK and organized 9 major promotional events of its own. In addition, STV has provided papers at international conferences or organized workshops in Crimea, Mexico, Cuba, Washington, Glasgow (IFLA), Chile, Mexico again, Vietnam, Brazil, and Ireland. During this period STV was represented on at least 15 committees, advisory groups, working groups, etc. In terms of furthering STV’s objectives, a few of these activities merit highlighting because they are important in their own right but also because they illustrate the difficulties faced in attempting to create a coherent infrastructure of services for visually impaired people in the UK.
Public Library Standards

In May 2000 DCMS issued draft public library standards and naturally STV responded. This was the first ever attempt by the central government to define “comprehensive and efficient services” as required by the 1964 Public Libraries and Museums Act, which placed upon the secretary of state a statutory duty to superintend these services. STV was keen to ensure that these standards addressed the needs of visually impaired and other disabled people, but the draft standards did not do so. We were invited to meet DCMS officials and then to submit our own proposals for the standards and the new Annual Library Planning Guidelines. The final standards published in May 2001 included the provision of large print books and books on tape. They also included a requirement to take “requests for items in alternative formats which meet the needs of people with disabilities” (DCMS, 2001, p. 12). Similarly, the final Annual Library Planning Guidelines published in April 2001 addressed the needs of socially excluded groups and recommend community profiling to identify those needs, as we had recommended. We did not achieve everything we sought, but this was real progress.

In April 2004 DCMS issued a consultation paper on revising the standards launched in 2001. The objective was to reduce the administrative burden on local authorities by reducing the number of standards from nineteen to ten (DCMS, 2004b). Some cynics believed it was more to do with reducing the requirements on local authorities to spend money on specified library services. Whatever the truth of the negotiations between DCMS, which has responsibility for the service, and the Office of the Deputy Prime Minister, which controls local authority expenditure levels, the revised standards did not include the earlier requirements regarding the provision of alternative format materials and requests for such materials. As usual, STV protested and made recommendations for their reinstatement and the inclusion of accessible electronic workstations, but the final standards, which were published in October 2004, did not include any mention of these basic requirements (DCMS, 2004a).

Naturally, STV was bitterly disappointed that DCMS had set back the cause of the social inclusion of visually impaired people in mainstream library services. Ironically, when the House of Commons Culture, Media, and Sport Committee published its report on public libraries in March 2005, it recommended “that DCMS take a lead within Government in securing funding to support the production of a much greater range of material in alternative formats which are accessible to people with disabilities. We believe that the provision of materials in such formats should be the subject of a national standard” (para. 111).
Framework for the Future

In February 2003 the DCMS published its long-awaited vision for public libraries for the next decade. This was not a consultation paper but was the then minister for the arts' vision, which had been compiled for her by an outside consultant. Needless to say, it made no mention of disabled people except for a passing reference to housebound services for elderly people. STV sent an uninvited response to the minister querying her commitment to the government's social inclusion policies and received a reassurance that STV's comments would be taken into account by MLA. MLA had been charged with responsibility for drafting the Framework Implementation Plan to translate the vision into reality with an extra £1 million per annum for three years. Our longstanding partnership with MLA and the keen interest of the new minister for the arts meant that we were able to benefit from DCMS's original faux pas.

The most immediate benefit was that MLA pledged £100,000 per annum for three years to maintain and develop Revealweb. It also agreed to fund a feasibility study of the potential for publishers to provide their electronic files of books to agencies for people with visual disabilities before publication. This had been a longstanding ambition of STV, in which the new minister for the arts and the last but one minister were interested. If RNIB, NLB, and others had access to these files, not only would it reduce the cost of transformatting into alternative formats but it would greatly speed up the production processes. Furthermore, the whole organization of service delivery could be revolutionized to permit the end-user to specify their preferred format (Braille, large or giant print, synthetic audio output, or an electronic file to their PC) for any book they requested. STV drafted a specification for the feasibility study, which MLA contracted Rightscom to carry out. Rightscom reported that it was feasible to come to such an arrangement if the publishers could be reassured about the secure use of their files (2005). At the present time RNIB and NLB are in discussions with DCMS and the Department of Trade and Industry to carry out a pilot project.

Copyright

Such is the crucial importance of intellectual property rights in the world of library and information services for visually impaired people that the STV Board resolved in 2000 to make “copyright developments” a standing item for the agenda of every meeting. In the same year the RNIB proposed that we should establish a Copyright Round Table of STV members and other interested parties to prepare for the forthcoming European Commission (EC) Directive on the Harmonisation of Certain Aspects of Copyright and Related Rights in the Information Society (usually known as the Information Society Directive), which was passed in April 2001. Our concern was to ensure that the directive included an exception for
disabled people, and Article 5.3b of directive 2001/29 EC permits member states of the European Union to provide an exception “for the benefit of people with a disability . . . to the extent required by the specific disability” (European Commission, 2001). Now we had to persuade the British government to legislate for the implementation of this exception. This was achieved under the brilliant leadership of RNIB, which drafted a Parliamentary Private Members Bill that was taken up by Rachel Squire MP, who had secured a high place in the ballot of MP’s to introduce private (that is, nongovernment) bills. With all party support the Copyright (Visually Impaired Persons) Act became law in 2002. This was a tremendous breakthrough because our voluntary sector agencies no longer needed to undergo the costly and time-consuming process of securing copyright permission before they transformed a book into alternative format versions for visually impaired people. Additionally, libraries were able to provide an alternative format for an individual user without having to seek permission.

All of these developments were excellent, but the problem is that the exception only applies to visually impaired people and not to other disabled people with a print handicap, such as dyslexia or learning difficulties. The Copyright Round Table faced a stark challenge during the passage of this act. If we attempted to amend it to include the needs of other disabled people, as permitted by the EC Directive, it was likely that the bill would fail for lack of Parliamentary time. A pragmatic approach was deemed necessary, but we are now having to campaign to extend the exception in UK law to people with other print handicaps.

The treasury has recently announced that it has commissioned an independent review of intellectual property rights in the UK, and we intend to attempt to right this wrong. We also intend to press for the right to lend alternative formats produced in the UK to users and libraries in any country in the world and to have reciprocal rights to borrow such items. The IFLA Libraries for the Blind Section, the IFLA Committee on Copyright and other Legal Matters, and the World Blind Union are campaigning to persuade the World Intellectual Property organization to legislate such a right. Every national body for professional librarians should surely support this campaign for the basic right to have access to any book in an alternative format wherever it might have been produced in the world.

The Future

The above account illustrates the challenges faced by STV. We seem to take one or one and a half steps forward and then we are forced one step back. At no stage can we secure adequate and appropriate public funding for the services visually impaired people are entitled to. For instance, STV was particularly infuriated by the lack of recognition of the rights of disabled people in the Framework for the Future report (DCMS, 2003) and
decided to review its own vision statement originally produced in 1999. By the end of 2003 we issued a new vision, which is appended to this paper.

We can only hope that we can bring this vision to fruition, but we have to be realistic about our prospects. Contrary to the perception of many people in the UK, we do not respect and fund our services for disabled people, public libraries, and especially library services for disabled people in a way that bears comparison with other developed countries. As I wrote in the last issue of *STV News* in 2001:

> In other developed countries they do things differently and better. Consider these levels of state support for library services for visually impaired people in 2000:
> United Kingdom: 11.76 pence per annum
> United States: £3.83 per annum
> Sweden: £38.71 per annum
> It is difficult to avoid the conclusion that we preach social inclusion whereas they put their money in and practice it. (Owen 2001)

To illustrate the need for realism we have to report that the public funding for the maintenance and development of Revealweb is guaranteed only until March 2007. Therefore, we need to look to our own devices to attempt to create a better way forward.

Two recent developments encourage the hope that this is possible. First, and most importantly, RNIB and NLB have recently announced their intention to merge their library services by March 2007. It is difficult to underestimate the potential of this proposal. Second, STV and SCL have worked together since 2003 to establish the Gateway Project, which was launched in June 2005. This is a one-stop shop for all library staff to consult whenever they have a query regarding services for visually impaired people (see www.gateway-uk.org). It has quickly proved its value, but unfortunately it is dependent on generous support from the Ulvercroft Foundation as public funding is not available for such projects. We are realistically optimistic, however, that we can metamorphose STV once more and revert from a campaigning organization to a more practical support agency via a formal compact between the voluntary and public sectors to fund the Gateway Project. STV has shared a vision; it has not succeeded in translating it into a reality, but it has not entirely failed in making change happen.

**Appendix: Library Services for Visually Impaired People: A Vision of What Might be Before 2013**

The Framework for the Future report sets out a vision for libraries in 2013 in the form of 11 possible future practical service scenarios. Our vision is that all of these scenarios will apply equally to visually impaired people before 2013.
The Wider Information and Library Issues Project report sets out a more philosophical “vision for library and information services”:

- Users are information-literate and have seamless and unfettered access to information resources at the time and place of their choosing and in the form that they want, no matter where the resources are located.
- Access is facilitated by more and more information being available electronically, including a wider range of older resources made accessible through digitisation.
- The library is the focus for access to the wider range of services.
- The library’s role is more closely geared to customers’ needs, supporting self-navigation by users, helping them develop information literacy skills or providing intermediation, according to requirements. (Ede, 2003)

STV was part of the WILIP consultation process, and we share this vision in terms of addressing the needs of visually impaired people.

In order to achieve this before 2013 (visually impaired people have waited too long already), we need to set out some specific and more prosaic requirements that reflect the realities that apply to visually impaired people.

This is our vision:

1. That no matter what their personal circumstances are (born blind or losing sight through infirmity of accident) VIP’s will be able to access a continuum of library and information services (LIS) throughout their life which is equal to that available to sighted people but which meets their personal needs.
2. The totality of these LIS will be available in their preferred accessible formats via their preferred point(s) of contact wherever they may be situated in the LIS continuum.
3. That in order for this to be realised, all LIS providers will ensure that their policies and practices are reviewed in order to put the needs of their users first; in this case the needs of VIP’s whether they are users of public libraries, mainstream school libraries, specialist school libraries, college libraries, university libraries, workplace libraries, voluntary sector libraries or others.
4. That, given the lack of content in accessible formats, LIS will reaffirm and adapt their longstanding tradition of co-operation and resource sharing in order to ensure maximum access to content for VIP’s.
5. That, in order for this to be possible, all LIS whatever their sector will support the creation and on-going operation of a one-stop national referral agency which can advise and assist VIP’s and those serving them.
6. That all LIS will provide access to the wider range of services from other non-LIS agencies which can assist the life opportunities and quality of life for VIP’s.
7. That all LIS will ensure enhanced opportunities to access content either remotely or on site via accessible design of websites, opacs, digitisation projects etc. . . . and the provision of assistive technology.

8. That all LIS staff are provided with the basic training which will enable them to assist the achievement of this vision.

We anticipate that all publicly funded LIS will welcome and endorse this vision as it will help them to achieve their new responsibilities to promote equality of opportunities under clause 8 of the Draft Disability Discrimination Bill.

Any VIP should be able to contact any LIS of their choice and be able to request any item in whatever format they prefer, whether for leisure, educational or other purposes and feel confident that all reasonable and informed steps will be taken to ensure that it is located and retrieved, or possibly reproduced in the requested format, and forwarded to them at their preferred location. Then we will have a national offer to a national standard which removes the current postcode lottery!

REFERENCES


David Owen has been executive director of Share the Vision since May 1998. After graduating from Manchester University in 1965 he commenced his career as a trainee librarian with Nottingham City Libraries before undertaking the Postgraduate Diploma in Librarianship course at the University of Sheffield (1966–67). He then worked for Liverpool City Libraries in various roles, culminating in the post of assistant city librarian. In 1980 he took up the post of director of libraries, Manchester City Council, becoming director of libraries and theatres in 1986. He has contributed articles to various library journals and conference papers throughout his career and was awarded the O.B.E. for services to library and information services in 1998.
Setting Up a Computerized Catalog and Distribution Database of Alternative Format Materials for Blind and Visually Impaired Persons in Nigeria

Morayo Ibironke Atinmo

ABSTRACT
The purpose of the project discussed in this article was to set up a computerized catalog and distribution database of alternative materials for visually impaired people in Nigeria. The project was based on the need to open wider the gates of information resources, nationally and internationally, to this category of information users by identifying the location and availability of resources throughout Nigeria and creating a database for access and retrieval. Another purpose was to create a template for database entry, which could be replicated by other developing countries. A state-by-state survey of educational institutions, state libraries, and nongovernmental organizations serving the visually impaired in all of the thirty-six states of Nigeria and the Federal Capital Territory (FCT) was conducted. Three sets of data were gathered from a template for data entry of alternative materials and two questionnaires for institutions and the blind and visually impaired students. A database was designed and created using Microsoft Access. An American Disability Act (ADA) compliant Web site was designed, which has a “text-only” version for browsing by visually impaired persons (see www.alvi-laris.org).

INTRODUCTION
Blindness and visual impairments are common disabilities in all countries of the world. Nigeria is no exception to this phenomenon. The total population of Nigerians is estimated at 120 million people (Federal Office of Statistics, 1991), with blind and visually impaired persons numbering at least 1 million. It is also estimated that of this figure, more than 25,000 persons are of school age, and less than 10 percent of these actually attend
school, with the remaining 90 percent confined to houses or roaming the streets as beggars (Agbaje, 2000). For the small percentage of blind and visually impaired persons in schools from primary to tertiary levels, there is no adequate provision of reading and information materials. The need to produce enough reading and information materials in alternative formats for blind and visually impaired students at all educational institutions in Nigeria is steadily gaining momentum. This is a consequence of the federal government policy (Federal Ministry of Education, 1981) of equitable educational provision for all children, regardless of their physical, mental, or emotional disabilities. This policy encouraged an overwhelming increase in school enrollment for blind and visually impaired students.

In Nigeria today blind and visually impaired students are found at all educational institutions—in primary and secondary schools, polytechnics, universities, and vocational training centers. They, like their sighted counterparts, are in search of academic laurels. Unfortunately, the production and distribution of information resources in alternative formats to meet the needs of these blind and visually impaired students is haphazard and uncoordinated. The reason may be attributed to the fact that there is no national library service for blind and visually impaired persons in Nigeria.

THE CHALLENGE

Although there is no national library service there is a myriad of organizations involved in attempting to meet the needs of the blind and visually impaired, as set out in Table 1. The author was successful in winning the Ulverscroft Foundation/International Federation of Library Associations (IFLA) Libraries for the Blind Section’s Institutional Best Practice Award in 2003, in order to address the challenge of systematically auditing and recording the national provision of alternative format materials in Nigeria.

Federal Government Involvement: Educational Provision and Library Services

The federal government’s involvement has tended more toward establishing educational institutions to train special teachers rather than providing information material or library services. The establishment of the Federal College of Education (Special) (1977) and the Department of Special Education in the Universities of Ibadan (1974), Jos (1977), Bayero, Calabar, and Uyo attest to this fact. Government involvement in providing library services is minimal.

State Library Services

State libraries are essentially public libraries. They come under the auspices of each State Ministry of Education. The state librarian is a civil servant, designated the director of library services. Out of the thirty-six state libraries in Nigeria, only three—Oyo, Imo, and Abia—offer library services to blind and visually impaired students. These state libraries do not
Table 1. Government Agencies, Institutions, NGOs and Associations Serving Visually Impaired Persons in Nigeria

<table>
<thead>
<tr>
<th>Government and Its Agencies</th>
<th>Educational Institutions</th>
<th>NGOs</th>
<th>Braille Production Facilities</th>
<th>Libraries for the Visually Impaired</th>
<th>Associations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Ministry of Sports &amp; Social Development Braille House</td>
<td>Universities’ Dept. of Special Education at Ibadan, Jos, Kano, Calabar, Uyo</td>
<td>Anglo Nigeria Welfare Association for the Blind (ANWAB), Lagos</td>
<td>Anglo Nigeria Welfare Association for the Blind (ANWAB)</td>
<td>Anglo Nigeria Welfare Association for the Blind (ANWAB)</td>
<td>Association of Libraries for the Visually Impaired (ALVI)</td>
</tr>
<tr>
<td>State Library Board Special Schools: Primary Secondary</td>
<td>Hope for the Blind, Wusasa, Zaria</td>
<td>Hope for the Blind, Wusasa, Zaria</td>
<td>Imo State Library Board</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocational Training Centre</td>
<td>Gindiri Material Centre for the Visually Impaired</td>
<td>Gindiri Material Centre for the Visually Impaired</td>
<td>Oyo State Library Board</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Project Chari Love</td>
<td>Pacelli School for the Blind FCE (Spec.) Oyo</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
produce books; they receive Braille books from donors and make them available in their libraries.

*Special Schools for the Blind*

There are a few schools in Nigeria that are exclusively for blind and visually impaired children. An example is the Pacelli School for the Blind in Lagos, which transcribes books into Braille for its own students. At the secondary school level, visually impaired students are integrated with sighted students. Thus, visually impaired students are in secondary schools all over the country. For most of them books in Braille are rare unless they make private arrangements to procure or produce these books for themselves. This is also true of most of the students in tertiary institutions. They depend mostly on their own effort to get their reading materials in alternative formats.

*Nongovernmental Organizations*

There are three major nongovernmental organizations (NGOs) in southwest Nigeria and two in the north; they dominate the scene of materials production for blind and visually impaired students. Nigerwives Braille Production Centre, Lagos, produces Braille textbooks for blind and visually impaired students in primary and secondary schools. They also set up reading corners in special primary schools to promote Braille literacy. Anglo Nigeria Welfare Association for the Blind (ANWAB), Lagos, produces Braille by computer and offers library services. Its collection of about 200 titles in Braille and 200 audio tapes are in subject areas for adults, children, and undergraduates from the University of Lagos. Nigeria Society for the Blind, Lagos, is a voluntary organization with a vocational training center, a well-equipped library, and a recording studio for blind and visually impaired persons. It produces Braille by computer and also receives donations of books from abroad. Gindiri Materials Centre for the Visually Handicapped (GMCVH), Jos, in the north, provides a wide range of services to visually impaired persons in the Gindiri, Jos area. Braille books are produced in English and Hausa languages and sold to blind and visually impaired students at subsidized rates. Hope for the Blind, Wusasa Zaria, situated in Zaria in the north, produces reading materials in Braille and audio tapes. It also operates a recording studio.

*The Need for a Systematic Audit*

The foregoing has shown that there is a range of organizations that serve blind and visually impaired students in this country. The locations of these collections and their sizes and subject content have never been assessed in terms of adequacy or relevance. There has hitherto been no investigation on the types of equipment and services rendered by these organizations. In addition, the reading and information needs of the blind and visually impaired students have been based not on empirical evidence but on personal and individual requests.
The research described in this article, therefore, was considered a first step in finding a solution to the problem of inadequate reading materials in alternative formats. This article reports the findings of a study to identify the locations of alternative materials in Nigeria, to analyze the subject content of the materials in the effort to determine adequacy to meet demand for the reading and information needs of blind and visually impaired students in Nigeria. It was a fact-finding study to provide baseline data on the status of alternative format materials production and distribution in Nigeria. The end result is a computerized catalog and distribution database that will hopefully become an access point to materials available in Nigeria. It is also expected to provide the gateway to the unlimited resources on the Internet to the Nigerian blind and visually impaired student.

A FUNDAMENTAL PROBLEM

This study was necessary because of the urgent need to find a permanent solution to the perennial problem of inadequate provision of library and information materials to visually impaired persons in Nigeria. Due to increasing awareness and the constitutional provision for the education of the visually impaired, many more visually impaired children are enrolling in schools. Consequently, the demand for books in appropriate formats is increasing while the supply remains inadequate, and this is true at all educational levels from primary to tertiary levels. At the tertiary level in particular, visually impaired students fend for themselves in providing their own reading and information materials (Atinmo, 2000).

Another issue related to the above is the lack of options for locating and choosing reading and information materials. This problem was imaginatively described by Wallis who opined that

Users of a print library have options opened to them in locating reading materials. They can seek the assistance of staff or use the library catalogue or just browse the shelves. By contrast, visually handicapped persons experience a great deal of intervention by staff, relatives and friends in the process of book selection. This may not only inhibit the borrower’s choice, but introduces other factors such as a desire not to be a burden on the helper. Consequently the borrower may be less discriminating in book choices. In addition decisions reached by the helper in the choice of books sometimes results in inadvertent “censoring” of the choices offered. (1996, p. 12)

Wallis is referring to blind and visually impaired persons in Australia. In Nigeria this problem has a different connotation altogether. While the struggle to produce enough educational and/or recommended texts in all subjects is still ongoing, the provision of recreational reading materials is negligible. Therefore, it is not a question of options or intervention from helpers. Visually impaired persons desire to read a variety of
materials like fiction, poetry, and everything else, but these options are not available to them. It is hard enough to produce the required texts for educational purposes; there are hardly any funds left for the production of a variety of materials for recreational reading.

**Objectives of the Research**

The major objective of this research was to construct an electronic database of alternative materials in Nigeria. Information to be fed into the database included the locations of the institutions where alternative materials are held, the bibliographic descriptions of the materials, and the services rendered to blind and visually impaired persons. Therefore, the specific objectives of this research were the following:

- To design a template with catalog information for data entry of alternative materials and thus enumerate the collections by author, title, subject, format, etc.
- To analyze the database by subject in order to determine the strengths and weaknesses of the alternative materials collection
- To determine the names and locations of libraries, institutions, and NGOs serving blind and visually impaired persons in Nigeria
- To give a profile of the visually impaired user of these services

**Methodology**

A template was designed to collect documentary data on the alternative format materials in the institutions visited around the country. It contained the following fields:

- **Author:** The individual or corporate body responsible for the intellectual content of the material
- **Title:** The title of the material was copied from the Braille or large print material; for talking books, titles were taken from the labels of the cassette or the catalog of the hosting institution
- **Subject:** This was determined from the call number and/or title of the material
- **User level:** Primary, secondary, or tertiary as indicated by the host institution or investigator’s judgement
- **Publisher:** Publisher information was either given on the material or provided by the hosting institution where possible
- **Publication Year:** Supplied if found on the publication
- **Edition:** Supplied if found on the publication; for some volumes determined by counting the number of volumes per title
- **Number of volumes:** Braille books usually run into several volumes
- **Languages:** Refers to the language of the material
- **Format:** The alternative format in Braille, large print or tapes
- **Status:** This indicates the Braille grade of the material, whether 1, 1.5, or 2
- **Duration:** This indicates length of time for tapes as shown on the cassette
A questionnaire was used to collect data on institutions serving blind and visually impaired students in the country. It requested information on the equipment available and services rendered to their clientele. A second questionnaire was used to collect detailed information on the blind and visually impaired students in the secondary and tertiary institutions visited. Data was collected on their educational background; Braille reading and writing proficiency; Braille grade preferred; library and Braille production center use; possession of Brailling or recording equipment; possession of books and tapes; computer literacy and Internet accessibility; and their reading and information needs.

Data Analysis

Three sets of data were collected and separately analyzed. Microsoft Access was used to analyze the template and the institutions questionnaire. Microsoft Excel was used to analyze the questionnaire on the blind and visually impaired persons. Using Microsoft Access XP file format, a table for entry input into the database was created, with the fields earlier enumerated on the template. Data was systematically input into the database and editing was done simultaneously. An American Disabilities Act (ADA) compliant Web site was designed for the database. The ADA sets standards for design of interfaces, including Web interfaces, so that people with disabilities, including visually impaired persons, can interact with them. The site also has a “text only” version so that visually impaired persons can browse using nongraphical browsers. The Web address of the database is www.alvi-laris.org.

Research Findings

The findings are presented in three parts: information about the holdings, the institutions, and the students.

The Holdings

From the template questionnaire, a total of 1,860 entries were made of alternative format materials, which were either produced within the country or received from domestic or foreign donors. There were more titles from Lagos than from any other state, and several states (Bauchi, Benue, Cross River, Enugu, Kano, Ogun, Osun, and Rivers) held less than twenty Braille titles each. There are collections of tapes in three institutions: at
St Joseph’s Calabar; at the Vocational Training Centre in Oshodi, Lagos; and at the Federal College of Education (Special) Oyo. ANWAB also has a tape collection, but the size was not indicated. Only the Oyo State Library Board has titles in large print. Some states have visually impaired students but no materials. These were Adamawa, Akwa Ibom, Delta, Ebonyi, Jigawa, Katsina, Kebbi, Nassarawa, and Taraba. Some of the institutions in these states had only one or two visually impaired students. Therefore, they might be reluctant to spend any money or effort to get Braille books for just a handful of students. Some states had neither a school for blind and visually impaired persons nor alternative materials. These are Bayelsa, Delta, Gombe, Yobe, and Zamfara. Every state is supposed to establish a state school for children with disabilities.

The nature of the holdings is illustrated in Table 2. The subject data is not complete and only covers 1,449 of the 1,860 items held, but it does illustrate the paucity of holdings in major areas of study. Not surprisingly, there are more books on religion than any other category of nonfiction.

**Institutions and Services**

Seventy-one institutions were visited by research assistants (see Table 3).

**Table 2. Distribution of Alternative Materials by Subject**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Number of Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiction</td>
<td>507</td>
</tr>
<tr>
<td>Religion</td>
<td>246</td>
</tr>
<tr>
<td>Literature</td>
<td>173</td>
</tr>
<tr>
<td>Science Fiction</td>
<td>77</td>
</tr>
<tr>
<td>English Language</td>
<td>63</td>
</tr>
<tr>
<td>Special Education</td>
<td>41</td>
</tr>
<tr>
<td>Economics</td>
<td>40</td>
</tr>
<tr>
<td>Biography</td>
<td>39</td>
</tr>
<tr>
<td>History</td>
<td>34</td>
</tr>
<tr>
<td>Social Studies</td>
<td>29</td>
</tr>
<tr>
<td>Mathematics</td>
<td>25</td>
</tr>
<tr>
<td>Life and Living</td>
<td>24</td>
</tr>
<tr>
<td>Integrated Science</td>
<td>23</td>
</tr>
<tr>
<td>Agricultural Science</td>
<td>19</td>
</tr>
<tr>
<td>Biology</td>
<td>19</td>
</tr>
<tr>
<td>Music</td>
<td>18</td>
</tr>
<tr>
<td>Government</td>
<td>17</td>
</tr>
<tr>
<td>Health Education</td>
<td>15</td>
</tr>
<tr>
<td>Detective Stories</td>
<td>14</td>
</tr>
<tr>
<td>Motherhood</td>
<td>13</td>
</tr>
<tr>
<td>Business Studies</td>
<td>11</td>
</tr>
<tr>
<td>Career Guides</td>
<td>10</td>
</tr>
<tr>
<td>Science</td>
<td>10</td>
</tr>
<tr>
<td>Computer Science</td>
<td>6</td>
</tr>
<tr>
<td>Cookbooks</td>
<td>6</td>
</tr>
</tbody>
</table>
Table 3. Distribution of Institutions by Category

<table>
<thead>
<tr>
<th>Type of Institution</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Schools</td>
<td>33</td>
<td>46.8</td>
</tr>
<tr>
<td>Special Education Centers/ Special Schools</td>
<td>10</td>
<td>14.1</td>
</tr>
<tr>
<td>State Library Boards</td>
<td>9</td>
<td>12.6</td>
</tr>
<tr>
<td>Tertiary Institutions (universities, polytechnics, and colleges of education)</td>
<td>7</td>
<td>9.9</td>
</tr>
<tr>
<td>Ministries of Education/Vocational Training Centers</td>
<td>6</td>
<td>8.5</td>
</tr>
<tr>
<td>NGOs</td>
<td>6</td>
<td>8.5</td>
</tr>
<tr>
<td>Total</td>
<td>71</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 3 shows that more secondary schools were visited than any other category because blind and visually impaired students are integrated with the sighted at this level, so they are more widespread. In fact, there may be fewer than ten in any one school. These students are also integrated with their sighted peers at the tertiary level, but their number is greatly reduced at this level. The reason for this may not be unconnected with the dearth of information materials for them. These institutions provided information on the equipment available to them and the services provided for blind and visually impaired students.

**Equipment** These institutions have equipment that would be expected in places serving blind and visually impaired persons. Perkins Braille were held by 43 institutions. The functionality of the machines was not determined, but many respondents complained about the state of disrepair of their Perkins Braille—for example, only one out of ten machines functioned properly. The typewriter (27), slate and stylus (17), tape recorder (11), abacus (7), Thermoform (7), computer systems (7), Braille embosser (6), writing frames (4), hand frame (3), recording studio (3), radio set (2), and Smart view CCTV (2) were found in various institutions. It was surprising that many respondents did not possess the slate and stylus. Only 5 institutions are Brailling by computer, which means that Brailling is normally produced manually.

**Services Provided** These institutions offer a range of services including the following:

- Braille Services: This involves Brailling educational material such as handouts, examination papers, and even text books manually or with the Braille embosser. The method of Brailling differs as some institutions use Perkins Braille while others use embossing machines. This naturally affects their productivity.
- Computer Services: This has two connotations. It may mean the transcription of a textbook with the Brailler machine or computer training
at cost for some individuals. It may also mean the use of assistive technology as two institutions have screen readers.

- **Counselling Services:** Counselling is provided for educational advancement and vocational training in particular. However, many other topics necessary for a comfortable life and living for the visually impaired are usually discussed.

- **Library Services:** The library services may be variously defined because the institutions offer these services in various ways. There are some institutions that have a place designated as “The Library,” which contains alternative format books relevant to the needs of the blind and visually impaired persons. There are other institutions with no place designated as “The Library,” yet they meet the requests of their clientele through customized services. They produce Braille books on request at the price of the print edition.

- **Rehabilitation Services:** Rehabilitation services are offered to people who became blind in adulthood and may not be able to learn Braille. These services are also provided for adult blind illiterates who want to be gainfully employed. These services are customized according to individual needs to enable the person to adjust psychologically, educationally, and vocationally to a new way of life. They also include mobility training.

- **Supportive Services:** This service was considered worthy of mention because the particular service was initially set up for hearing impaired undergraduates at the University of Ilorin, Kwara State. The unit helps visually impaired undergraduates to locate appropriate reading materials.

**The Blind and Visually Impaired Persons: A Profile**

There were 452 respondents to the questionnaire on the reading and information needs of blind and visually impaired persons in Nigeria, but only 433 (95.1 percent) of the questionnaires were usable for analysis. There were 277 males (64.4 percent) and 153 females (35.6 percent) respondents. They were from every level of the educational cadre, from primary school to postgraduate level. This indicates that the blind and visually impaired Nigerians are achievers, their disabilities notwithstanding. They are quite articulate in their requests for adequate reading materials, and rather than complain several of them have resorted to Brailing their materials themselves or appealing to foreign donors for book requests. The questionnaire returns provided insights into issues relating to Braille reading for the blind and visually impaired Nigerian.

Most of the respondents—180, or 41.8 percent—possessed the primary school leaving certificate (PSLC). They were already in secondary schools. These were followed by respondents who had the secondary school certificate (SSCE) or the West African Examination Certificate (WAEC). There were also respondents who had a Master degree (5, or 1.2 percent) and
a first degree (18, or 4.2 percent). This indicates that blind and visually impaired persons could earn higher degrees if given the chance. Right now Nigeria has blind and visually impaired persons in executive positions in different walks of life. A few examples will suffice. Barrister Danlami Basharu is the director of the Anglo Nigeria Welfare Association for the Blind (ANWAB). Mr. Sam Akinyemi, the president of the National Braille Council of Nigeria (NABRACON), is a technocrat in the Ogun State Ministry of Science and Technology. The University of Ibadan recently awarded a first class honors degree in law to a blind student, Femi Fayemi, who graduated at the top of his sighted classmates. However, there is a sharp decline in numbers between secondary- and tertiary-level students. There were 70 (16.3 percent) candidates at the tertiary level compared to 340 (79.3 percent) at the primary and secondary school levels. It would be a point of research interest to investigate the reasons for this, in particular to measure the aspirations of blind and visually impaired persons for higher education compared with the challenges they face in obtaining a conducive environment for their studies.

Figure 1 shows that 374 (86.9 percent) of the respondents could read and 371 (86.3 percent) could write Braille proficiently. Braille reading and writing are essential skills for blind and visually impaired persons. Not surprisingly, 85 percent prefer Braille to reading large print or audiobooks, and 85 percent of respondents preferred to use grade 2 Braille. However, 75 percent had no personal Brailling or recording equipment, and only 12 percent owned a slate and stylus. Consequently, it would be expected that respondents would use libraries or Braille production centers; however, only 50 percent have done so. This means that in all probability libraries and Braille production centers are not located within reach of the respondents or they are ignorant of their existence. The highest number of users of libraries (167, or 38.8 percent) and Braille production facilities (73, or 17.1 percent) are in the southwest where such facilities exist. We may therefore say that if the facilities were available, the respondents would use them, as indeed some respondents from the north central zone asserted that they would use libraries if they were available. Many others write to foreign donors for books of their choice. Some tertiary-level students confirmed that they buy print books and then record on tape, but only 20 percent of respondents had personal collections. Their efforts are commendable, but the materials produced are limited to individual use. As long as these self-efforts persist without deliberate intervention from government and other stake holders, the information deficit and paucity of alternative materials for the blind persons will continue.

Outcomes and Conclusions

The primary aim of this project was to produce a computer-based catalog via the Internet of alternative format materials for blind and visually impaired persons in Nigeria.
impaired persons in Nigeria. It is not a full-text database, but it gives cataloging information about each item and the addresses of organizations serving the blind and visually impaired people in this country. An opportunity is created, therefore, whereby these organizations may identify themselves as fellow laborers and decide to cooperate in a practical way to promote access to collections beyond their immediate environment. This database will hopefully be updated on a regular basis, and libraries may want to contribute their records of alternative materials as their stocks increase. This database could become the foundation of a network of Braille-producing organizations and institutions. Correspondence needs to be established among the Braille producers to share catalog information on Braille books in order to avoid duplication of effort and waste of money. This sharing of catalog information is working well in Russia.

In Nigeria several Braille producing centers have agreed in principle and have already worked out modalities for the operation of networking or resource sharing. For example, Nigerwives, ANWAB, Gindiri (the vocational training center), Oshodi, the Department of Special Education, the University of Jos, and the Federal College of Education (Special) Oyo all have identical Braille translation equipment (Obi, 2003). This indicates that they could share master copies and exchange lists of Brailled materials and other formats. However, the Russian example of a computerized
database is a good precedent. To make sharing of catalog information work among Braille producers in Nigeria, several authors have suggested different approaches. Adimorah (2000) called for a national library and information center to serve as a national coordinating body that will not only efficiently produce and distribute Brailled materials but also will serve as a link with international libraries and organizations. Obinyan and Ijatuyi (2003) supported Adimorah’s national coordinating body, while Iweha (2003) suggested several networks operating at different levels from the grassroots to the states, regions, and zones. He also suggested networks of materials-producing organizations of educational institutions and so on.

Such considerations are important because the database contains only 1,860 titles in total, of which 1,449 were books in Braille, 231 audiotapes, and 80 in large print. These were found in only 23 of the 36 states in Nigeria. Are the blind and visually impaired persons in the states without materials not receiving reading materials? When the size of the total collection in the whole country is considered, it becomes obvious that there is a book famine as far as alternative materials are concerned. In a different context, but with the same meaning, this corroborates Jim Sanders’s (2005) comment that books made for the blind and visually impaired persons are too few: “Despite the wonderful efforts of some libraries and publishers, less than 5% of printed materials are available in accessible formats such as Braille or audio CD. While many libraries offer talking book collections, or even access technology, their efforts pale in comparison to the same service print-reading tax payers receive” (Sanders, 2005). This scarcity of reading materials may be explained by the scarcity of Braille production and audio-recording facilities. Braille producers are only six in number, and they are all located at urban centers. Although they use computerized systems to transcribe, they still are not meeting the demand for books and reading materials. This situation is in accordance with the explanation of the World Blind Union (WBU) on the scarcity of Braille and talking book facilities in developing countries. The WBU opined that the facilities for the production of Braille and talking books in developing countries are scarce and generally restricted to urban areas. Teachers, librarians, and other professional staff rarely receive the necessary training and are often poorly paid. The scarcity of personnel associated with producing Braille materials may also account for the scarcity of reading materials. All the painstaking work of editing and preparing a text for Brailling may be too discouraging to many prospective Braillists.

It is a matter of necessity rather than a luxury for one to acquire the ability to read and write (Basharu, 2002). It is even more desirable for the blind to learn to read and write Braille. This is why Braille literacy is an imperative for the blind—it is the means of communication, leading to in-
teractive activities with the sighted world. Unfortunately, Braille literacy in Nigeria is plagued with several problems. There is a shortage of personnel to teach or produce Braille. In a workshop paper, Abilu (2004) asserted that many teachers lack expertise in mathematical code and science notation, thus making the teaching and learning process problematic for blind and visually impaired students. There is also a lack of facilities to teach Braille. Slates and stylus, the writing frames, and Perkins Braille are all in heavy demand but in short supply in the country. The burden of Braille literacy has devolved again onto the NGOs, and Nigerwives in particular tackles this by organizing workshops for teachers of primary school blind children, as well as Braille reading competitions to encourage the children to learn to read and write Braille.

Another issue related to Braille literacy in Nigeria is that Nigeria has given the Unified English Braille Code (UEBC) formal recognition and adoption. According to Obi (2003), two immediate gains are expected from this change. New code books will be produced and will be locally available to Braille students, teachers, and users. Materials will be provided for teachers, producers, and users to update themselves, and this will automatically mean an improved level of competence all around. With this adoption of UEBC in Nigeria, it becomes necessary to test and adopt a grade II code for each of the major Nigerian languages (Akinyemi, 2004). There are three major Nigerian languages—Hausa, Igbo, and Yoruba. The proposed grade II Yoruba code has been undergoing testing in homes and institutions for the blind in the southwest and north central zones. The onus is on Braille transcribers to work out Braille codes for each of the 250 languages and dialects spoken in Nigeria.

The database has been constructed and placed on a Web site to enable all stakeholders—producers, users, libraries, NGOs, the government, and the international community—to know the locations of our alternative materials and be able to access them. This should increase the choices of books and tapes available to all concerned and even provide a gateway to disability resources on the Internet. If we are to achieve substantial progress, however, all concerned need to address the following issues:

- A national strategy should be developed, aimed at improving, publicizing, and promoting the reading and information needs of blind and visually impaired persons. Such a strategy should involve all the organizations serving the blind and visually impaired working together to determine areas of collaboration and cooperation to avoid duplication of effort.
- Such a strategy could also involve all these organizations performing certain functions exclusively. For example, rather than producing a book based on individual requests, the libraries for the visually impaired
should periodically select standard textbooks for transcription into alternative formats, while producing centers will busy themselves with transcribing to these formats and distributing to the users through the libraries. Recreational reading materials should be produced in this way. This will ensure that good books are produced and that everyone will have access to books, especially at the tertiary level.

- The government needs to be persuaded to infuse large sums of money into the administration of special education, not only to provide equipment and facilities but also to provide current reading and information materials for all categories of blind and visually impaired persons. In this regard, the library at Johnson Street, Surulere Lagos, should be revived to produce books for distribution to visually impaired persons at all educational levels.

- Individual organizations should be selected as nodal points for production and distribution of certain kinds of materials. For example, the Federal College of Education (Special) Oyo should be mandated to produce and distribute tertiary-level books for the students at that level. The Departments of Special Education in the universities should also be book producers. The state libraries that are already serving the blind and visually impaired persons should expand their services, while those who have no services at all should initiate such services for the blind and visually impaired. The NGOs should continue to produce books for primary- and secondary-level students and ensure that these books are available to all who need them.

- The National Library of Nigeria should be made the coordinating center for all activities related to the production and distribution of reading and information materials to blind and visually impaired persons. Each alternative material produced should be legally deposited at the National Library so that there is a current bibliography of alternative materials.

- The National Library should ensure that every state library has a collection of materials for blind and visually impaired persons. Each state library should also maintain a register of blind and visually impaired persons in the state, with a profile of their reading needs and an update on their educational and employment status.

- Blind and visually impaired persons need to learn to use the computer and be able to exploit the resources on the Internet. The database just created cannot be used unless one is computer literate.

- There must be ongoing investment to sustain this effort. For example, the newly created database needs to be used, updated, and maintained regularly. It should incorporate information on every alternative material received or produced from each institution in the future.
References


Wallis, L. (1996, September). Library without walls for people with print disabilities. *Link-up: A quarterly newsletter providing a national forum for the discussion to issues relating to services in Australian libraries in the areas of cultural diversity, literacy and disability, 12.*

Additional Reading


Morayo Atinmo is a Professor of Library Studies in the Department of Library, Archival and Information Studies (LARIS), at the University of Ibadan, Ibadan, Nigeria. She got her MLS degree (1974) from the School of Information Studies, Syracuse University, Syracuse, New York, and her Ph.D. (1987) from LARIS Department, University of Ibadan, where she is now the Head of the Department. Her research interest in library services to persons with disabilities, particularly the visually impaired was kindled when as the recipient of the IFLA/Martinus Nijhoff Study Grant for 1981,
She visited five western European countries to study the production and distribution of reading materials to visually handicapped readers. Professor Atinmo has produced and published many scholarly articles on this subject through local and international outlets. She is a member of the IFLA Section for the Blind and the President of the Association of Libraries for the Visually Impaired (ALVI), an organization that as a section of the Nigerian Library Association, works as the communication link between and among libraries serving persons with visual impairment in tertiary institutions in Nigeria.
The notion of developing countries needs definition, as do the concepts of visual and print impairment. The article looks at the situation of print impaired people in various countries and proposes possible activities to meet their needs based on existing projects and experience.

The Need for Definitions
In order to make any sensible comparisons between countries and their libraries serving the print impaired, it is necessary to establish several definitions. It is easy to talk about developing countries and visually impaired readers as though they were all the same. In reality there are radical differences between conditions in different countries, as there are between the different people who, for one reason or another, cannot read a conventionally printed book and need special support.

Any categorizing of countries will be an oversimplification. It will ignore the cultural and political history that makes the country what it is today and may differentiate it from its neighbor, which though similar in geography, climate, and peoples, may yet be different in the services that it provides. For the purposes of this article we have to work with these simplifications.

The differences between countries emerge in the way that each project is set up and carried out. In order to group the descriptions of projects this article will group countries that have sufficient common characteristics. The first group to be considered is those that are poor by any criterion. In many parts of the world there are countries in which there is little social support and in which the average earning power is too low to provide the
requisites of education even though there may officially be schools for all. Low wages and a high level of unemployment in a context where the government may not actually know how many citizens it has or where they are is not a recipe for tax-based development. In such countries there is little or no support for the visually impaired, other than that provided by the local organizations of the blind and foreign charities. The chances of a visually impaired child going to school are small, and the chances of the visually impaired having any professional support even smaller.

The second group is those countries that are recognized as being developing countries even though visibly prosperous. There may be banks and all the signs of a high-tech invasion, but next to these there are large parts of the population that live in poverty. There may be schools for the blind but the reality is that only a fraction of visually impaired people receives any help at all. Few get any schooling, and as a result there is rarely any work other than begging.

The third group of countries that will be considered in this article is those that are better developed, or in some cases have been better developed in the past and have lost some of the supporting infrastructure. Such countries will probably have national and local libraries. There will be schools and a reasonable level of social support; however, this support may not extend to all handicapped people. It may mean that visually impaired people have to rely on their own organizations rather than on the state. They may not have the means to develop technical and organizational changes that would enable them to provide effective services to their constituency.

This somewhat arbitrary grouping has emphasized the presence or absence of education, especially for handicapped people. Where there is little education, literacy levels are low and the demand for facilities such as libraries is equally low. In developing countries there is a hard logic. Where there are only a few libraries these are for the educated elite. A broader public library service follows from a policy of universal education. Much of the charitable support, therefore, is connected with books, and reading is focussed on primary and secondary education.

Figures quoted in newspapers at the end of 2005 show that while literacy is slowly increasing in Asia and Latin America, with about a third of the population functionally illiterate, an increasing proportion of its population in Africa has not learned to read or write. When the average across the continent is quoted at nearly 50 percent, and there are countries with successful education programs (think of South Africa, Uganda, and Kenya), then the plight of children in the less-developed countries is serious. If the able children are not being educated, then the disabled have less of a chance. Without education the climb out of poverty will be long and difficult.
What Is Print Impairment?

People often refer to “the blind” as though they were a lumpen mass rather than a collection of individuals. In order to understand some of the library projects that will be described below, it is worth reminding ourselves what is meant by terms like “blindness,” “visual impairment,” and “print handicap.” The definitions matter since they affect the types of projects and the target groups. Blindness is a scale of measures from seeing absolutely nothing to having partial sight up to the level that the government sets as the limit to be registered as blind.

Research suggests that the percentage of visually impaired people is about the same in all countries (Bruce, McKennell, & Walker, 1989; Gorter & Melief, 1998). The difference is that the developed countries have an increasingly ageing population who acquire visual impairment, while developing countries have far more young blind and fewer elderly people.

Resources

The resources considered here are those that are provided for visually impaired people, such as Braille, large print, audio, and digital files. These are normally produced in institutions serving the needs of the blind and visually impaired people, rather than in libraries although, as will be seen there are some libraries that incorporate production services. These institutions are necessary to provide an alternative format of the book in question for the simple reason that the client cannot read the book in its original form.

The second, and increasingly important, source of alternative access to literature is public libraries themselves. There are examples of the provision of equipment to enable the print impaired readers to access the materials held by the library. Some of these libraries have also been able to add production facilities, supplying an on-demand service for the production of alternative format materials.

Ethical Issues

Any consideration of the supply of books to visually impaired people in developing countries has to consider the question of costs against the benefits that can be provided. Access to literature has to be judged alongside other needs. Can we, for example, claim that access to literature is more important than access to clean drinking water? It can be argued that more money should be given to the restoration of sight and preventive medicine than to the provision of library services. Giving sight back to people going blind can return them as a useful members of society whether or not they can read.

Education is often a rare privilege. Many of the library projects being considered here are concerned with education. In the least developed
countries education cannot be taken for granted. It may be considered a human right and in many countries it is a legal requirement, but in reality not all children receive education, and only a small percentage of handicapped children ever get to school. For example, countries in French-speaking West Africa may have populations of 10 million, but less than 100 visually impaired children are in special primary schools. For that 100 in school there are 25,000 not receiving special education. Under these circumstances concerns for broader library services have to be subordinated to the provision of accessible literature within those schools that do exist.

What value should society give to the provision of access to literature and information? Any society attempting to modernize itself has to consider the importance of education and by implication permanent education. This in turn implies access to information. The arguments, both moral and political, have already been well made in the world of libraries (International Federation of Library Associations and Institutions, 2002), and most countries are doing their best with whatever resources they have to ensure basic education at the primary school level. In developing countries, however, there are few governments that have sufficient money to provide the level of education and the number of places that they would wish. It is not surprising, therefore, that resources are given first to the sighted and physically able. As a consequence the majority of provision for blind and partially sighted children is funded by charities from developed countries rather than being part of government spending. Governments may put their names to international charters and declarations, but the reality is that where choices have to be made handicapped people usually receive fewer benefits. We cannot blame governments for this, although we can proffer arguments to show that blind and visually impaired children are just as capable of benefiting from education as sighted children and therefore of becoming useful and contributory members of society. Currently, however, development of library services for this target group and access to literature in schools falls largely on the shoulders of charitable agencies.

**Categories of Support Agencies**

The range of support agencies is broad, and their concern for libraries, among all the other things that they do, is minimal. In order to understand the sort of support that is being given to libraries in developing countries, it is worth looking at the structure of charitable agencies. This article will focus on those agencies that are wholly or partially concerned with the problems of blindness and visual impairment, recognizing that these are a small minority within the world of charities.
International Organizations

Many of the international bodies are multipurpose. They have a broad range of activities to meet a broad range of targets. Bodies such as Oxfam, UNESCO, Medecins Sans Frontières, and agencies carrying out national development programs have developed a small number of actions directed toward blind and visually impaired people. Most of these are concerned with blindness prevention. It is rare to find even part of one of their programs concerned with the provision of literature or other means of access to literature.

Uni-Purpose International Organizations

There are some international organizations solely devoted to the problems of the blind and visually impaired. The best known are perhaps the Christofel Blinden Mission (CBM), Sight Savers International (formerly the Commonwealth Society for the Blind), Hilton Perkins, and Helen Keller International (HKI). Although these organizations have clearly defined target groups, libraries and the provision of literature are rarely central to their aims. When they do get involved with library projects, however, they usually provide good support. Notable examples are the creation of the African Braille Centre in Nairobi as part of the development by Sight Savers International and the building of a Braille center at Promhandicam in Yaoundé as part of a complex containing workshops, a rehabilitation center, and a primary school supported by CBM. The chances of having a library development project are much greater within such organizations since they already have expertise in the problems of visual impairment and an understanding of the value of education for visually impaired people.

National Organizations

Most developed countries and some of the developing countries contain small single-issue charitable organizations. Their effectiveness depends to some extent on the history of charitable donations. North America and northwest Europe, particularly Britain, have a tradition of charitable works that now continues to support development in the Third World. Such organizations vary from large-scale, often church-based, professional bodies to very small charities run by one or two people devoted to supporting a specific project in a specific country. Typical of these are family charities supporting a particular school or a particular village. Among this plethora of small organizations there are a few funding the education of blind and visually impaired children, and therefore they are to some extent concerned with access to reading. It is in the nature of these organizations that they work individually. They are often fishing for donations in the same pool as many others, and as a result there is little
communication between them. This tends to reduce the effectiveness of any single action. As will be discussed below, the grouping of interests and financial resources can result in much stronger projects. But at the same time one must recognize the importance of the link between the charitable fund and a specific project. If it were not for that obsessive devotion, many actions would never take place.

THE FORCE FOUNDATION

Although attempting to present a general picture of support for special libraries in developing countries, this article is written from the perspective of a particular organization. The FORCE Foundation, based in The Hague, is one of the few charitable organizations specifically devoted to supporting the development of library services for print impaired readers in developing countries. While recognizing that blindness prevention, rehabilitation, mobility, and legal matters for the blind are very important, the FORCE Foundation has chosen to concentrate on library and resource services. This small charity has three project coordinators responsible for setting up and carrying out its projects around the world. A small amount of central funding allows it to run its office in The Hague, but the majority of its project budget has to be raised through appeals to other funds. Fundraising is carried out in the Netherlands and through small fundraising offices established in Germany and the UK. Since its establishment in 1998, FORCE has carried out projects in Central and South America, southeast Asia, Russia, and the Commonwealth of Independent States (CIS) countries, and in both French-speaking and English-speaking Africa. Like all organizations offering any form of charitable aid, many requests for support are received through the mail and over the Internet. It is axiomatic that the number of requests will be many times more than any available budget. Hard choices have to be made, and many worthwhile proposals for the development of library resources are left with no support at all. An initial reaction might be to try to support those people and institutions that have nothing and are at the poorest end of the scale. Experience shows, however, that this is frequently a wasteful exercise. It is essential to choose institutions that have an infrastructure sufficiently well developed to guarantee the continuity of development after the period of funding that we are able to provide. There is little point in developing a center for the production of Braille and large print if, at the end of the development project, the institution is not able to support the staff and provide the necessary resources such as paper and book covers. It is a waste of other people’s money to train staff to convert schoolbooks into accessible forms if, after FORCE leaves, no one pays their salaries. If possible FORCE tries to find partners for our projects in the form of other charitable organizations sharing the same objectives and wishing to sup-
port the same institutions. In this way FORCE has been able to provide facilities that would have been impossible for any one of the partners. Collectively we have been able to make major changes in several countries. A further characteristic of the projects has been the willingness of a large number of experts to give their time and knowledge to other people for the price of their travel and hotel costs. Both FORCE, as a development organization, and the people who have been trained have to be extremely grateful to these specialists from around the world, without whom the training would not have been possible.

MATCHING ACTIONS TO LOCAL NEEDS

Some countries have had libraries for the blind for many years and therefore have different needs. For instance, in the former Soviet Union there was a long tradition of libraries for the blind, and today several of these are well into their ninth decade of operation. Prior to the collapse of the Soviet Union there was a system of central funding, a central production house, and distribution of alternative format books through the regional and local libraries right down to some libraries and homes for visually impaired people.

Today’s decentralized structure cannot function in the same way. Although a substantial government grant goes to LOGOS, the production house in Moscow, it is nowhere near the level of support that previously existed. Bereft of that structure, with all its good and bad points, the Russian libraries for the blind have been learning to fend for themselves. Within the Russian Federation these libraries have been reorganizing themselves, gaining support from provincial and local authorities and learning to work in horizontal structures in contact with each other. Outside the Russian Federation, in the CIS countries, the libraries have fared less well. In many cases the financial support has virtually disappeared.

Within the Russian Federation the FORCE Foundation has spent the last seven years working on a long-term strategy with the collective libraries as well as a series of individual projects with specific libraries. Each year the Russian libraries hold a conference in the Crimean resort of Sudak. 2 Within that conference libraries for the blind hold a workshop, partially funded by the FORCE Foundation. This is an opportunity to bring together the decision makers and provide a context in which they can develop new practices and formulate new policy. The meetings have developed from merely reporting on activities in individual libraries to detailed consideration of specific themes in sessions with international experts. Recent years have seen the introduction of structured group discussions and the use of management gaming. There has been a noticeable change in the attitudes of management toward the new technologies and cooperation with other libraries. One of the early developments from these
workshops was an electronic network stretching from the Black Sea to Vladivostok. This network now reaches almost all parts of Russia and more than half the libraries are active participants.

In order to assist in the development of this network the FORCE Foundation funded the creation of a central catalog and database of alternative format books; the database is run from the Russian State Library for the Blind in Moscow. A similar project established a national Braille music catalog in St. Petersburg. For several years the foundation helped experts attend conferences and workshops to expose the Russian libraries to practices and techniques employed in Europe and North America. In recent years fewer experts have been flown in and more attention has been paid to enabling the Russians to exchange their own expertise. There have been some specific developments in the provision of computers and access equipment for certain libraries. Funding has been obtained to set up a number of permanent computer workshops for blind and visually impaired readers.

One topic that poses specific difficulties for blind readers is that of tactile diagrams. Books are increasingly filled with illustrations of all sorts. Modern schoolbooks are presenting more of the information via images and symbols and less in words. Although there are techniques for creating raised lines on paper, the important skill is to create a tactile image that can be read by a blind person and still convey the same information as was intended by the original image. Simply creating a tactile version of what is on the page is rarely sufficient and often incomprehensible to the blind reader. Far too many tactile books are made to be admired by the sighted rather than to be read by the blind. Because of this FORCE has developed a course that was first delivered to a group of libraries in the northwest of Russia and has subsequently been repeated in Vietnam, the Philippines, Salvador, Peru, Bolivia, and Paraguay; the more recent workshops use local tutors.

Following support for a conference on the production of tactile books for small children, the Russian Federation decided to make the Tula Library for the Blind their center for tactile books. FORCE took the opportunity to publish a book on the topic (Ripley, 2005), which has now been made available in English, Russian, Vietnamese, and Spanish (see also König, 2004). The French version is currently in production. It is important in development work to be able to recognize an opportunity. A book produced for one course is now in use around the world.

Having a structure of libraries enabled commercial partnerships to be set up in the Russian Federation. The publisher of a multimedia encyclopaedia, accessible through the Internet, was prepared to work with the Russian State Library for the Blind in Moscow to create a version that would make this largely visual product accessible to blind people. FORCE supported the development of the new software, and in return the pub-
lisher agreed to provide free copies to twenty libraries for the blind and to supply the others at an advantageous price.

These examples show that where there is an infrastructure, good cooperation can be achieved and a lot can be changed for relatively little money. Countries with a public library structure but little or no support for visually impaired people pose a very different problem. Here the route to development is in persuading public library services that there is an important client group that is currently excluded by the lack of access technology. The underlying idea is embodied in the International Federation of Library Associations (IFLA) statement about access for all. It also relies on the belief that, once a sufficient number of libraries have begun providing facilities to enable blind and partially sighted people to access the materials, then there will be pressure from the readers themselves on both the government and the specialist institutions for the blind. Projects supporting this sort of development have to be relatively long term. There is little point in supplying a piece of access technology to one library without attempting to change the philosophy of the management of the library. Such projects have little chance of success if insufficient mass is created. There have to be enough libraries providing enough access to change the public perception of print impaired readers and of their right to equal access.

A couple of examples will serve to demonstrate the way in which a complex project can be built out of smaller separate components. Over recent years a team has been developed consisting of the director of Share the Vision, the chief librarian of a British metropolitan library, and a researcher from Manchester Metropolitan University. With occasional contributions from other experts, this team has provided a one-week management training course to senior library staff in Mexico, Chile, Brazil, and Vietnam.

There has already been considerable spin-off in the Latin American countries, and the example of Vietnam is worth considering in more detail. In Ho Chi Minh City the National Science Library has undertaken a series of actions that have radically changed the face of public libraries in Vietnam as far as print impaired people are concerned. Following the management training course the National Science Library introduced Braille production with equipment and training being provided through the FORCE Foundation. Shortly afterwards money was found to enable the library to build recording studios and to buy equipment for the production of audio books. Because this was an entirely new activity, the library was able to start with the most up-to-date technologies and received training in DAISY production. Once the studios started producing audio books, funds were raised in Europe to provide 100 playback machines, which have been installed in the National Science Library and in a large number of municipal public libraries. Working with a manufacturer, FORCE was able to purchase 80 closed-circuit television devices (CCTV),
mainly demonstration models, which have now been placed in the public libraries to enable partially sighted people to read any book.

The developments in the National Science Library in Ho Chi Minh City are now being replicated in the National Library in Hanoi. The library system has also undertaken the challenge of providing tactile graphics and staff members have received necessary training. Having started with the provision of accessible material for Vietnamese speakers, the National Science Library is now starting production of alternative format books in the Khmer language. Khmer speakers form a sizeable minority in Vietnam and are in the majority across the border in Cambodia. Moves are being made to link up with the Cambodia library service to increase the production of these books. Because of the motivation and commitment of the senior staff in the national library, a project that started at a minimal level with the production of Braille has dramatically increased access to literature for print impaired people. In other countries the results may not have been quite as dramatic, but the provision of CCTV to national and public libraries in countries such as Kenya and Chile has provided a valuable service and, it is hoped, started a trend toward the development of more accessible library services.

Sometimes library services emerge as a by-product of other actions. In the Philippines FORCE was able, with others, to raise funds for the establishment of a center to train visually impaired people to work in callcenters. As the trainees became proficient at using telephone technology, they needed alternative access to scripts at short notice. This required text enlargement software for those with limited vision and the production of Braille scripts for those with little or no sight. When not producing call center scripts, the resulting Braille production facility can be used for the production of educational books in Braille. This has created an additional facility to the more traditional support centers for the blind, which have themselves been assisted in developing production facilities for tactile graphics and scientific Braille.

In many countries there are institutions busy supporting the needs of visually impaired people. Often these centers have their own particular constituency, which may be defined geographically, religiously, or politically. It appears that in countries with a moderate level of development the biggest problem in the provision of the library or educational services to visually impaired people is one of fragmentation. There are often many institutions attempting to provide assistance. Few of these reach a sufficient size to make effective use of their resources, and very often there is a lack of communication between the institutions. Given the way that such institutions develop and are supported by a variety of charitable sources, it is not surprising that they have not been able or wished to cooperate with each other. All too often this fragmentation leads to an inadequate service for all. Support organizations with operatives in place or the capability
to send staff to the potential projects are sometimes able to offer neutral ground on which the various parties can meet to begin cooperation. Sometimes such organizations play a small but catalytic role.

In Indonesia FORCE has joined with other international bodies to sponsor the coordination of the Braille producing bodies. There is a need for a common Braille code to enable the exchange of materials. Once this project was well underway it was sensible to launch a second project on the development of an Indonesian Braille translator. There have been cooperative projects with the major libraries in Thailand, Chile, and Kenya. In the Ukraine FORCE has been able to join together with the cultural section of the American Embassy in Kiev to strengthen the potential of the production and library services of the National Union of the Blind. At the same time they have assisted two regional public scientific libraries to provide access facilities for visually impaired readers. It is hoped that with this combination both completely blind and visually and print handicapped readers will be able to have improved access to the books that they want to read.

These projects are illustrative of many other actions in other countries in which charitable bodies have been able to combine their resources with those of national, regional, and local libraries to change their services and to enable them to tap into an important and often underestimated part of the market. From the perspective of the print handicapped reader, this charitable input has opened up huge potential resources. In countries where it is difficult for a print impaired person to obtain a good education, this change in library services can make the difference between becoming a useful contributor to society or being excluded from it. Here the charities are adding their support to organizational structures that already exist. In most cases national or regional governments also support the libraries that the charities are helping. This gives some guarantee of continuity, providing justification for spending donors’ money.

The third group of countries (or parts of countries) is those in which there is no library infrastructure and little or no support for the blind and visually impaired. Generally these are the countries near the bottom of the poverty scale, although there have been projects in relatively wealthy countries, such as the upper Amazon in Brazil where the school for the blind is as poor as anything that can be found in Africa.

In selecting institutions for development projects in poor countries certain criteria have to be applied very strictly. In all cases the needs of the blind children and adults are great. But not all apparently worthy organizations can demonstrate that they are able to continue with the production of accessible books once the project investment is completed. There are many organizations around the world that have been providing a library and resource service to visually impaired readers for many years but that are wholly dependent on charitable donations from Europe or
North America. Such charities cannot be expected to continue supplying money endlessly. They demand good results for their investment. They expect good management of the resources they provide, and they themselves are subject to the decisions of committees and the vagaries of the stock market. It is very hard for the beneficiaries of such organizations to be faced with the withdrawal of funding by a long-term donor. But donors have to be reassured of the good use of their money and have guarantees of continuity.

Under these circumstances, the FORCE Foundation has put a lot of effort into field research, visiting the applicant institutions, investigating the situation in the broader national context, and checking the relationship of the institution with its government. Regrettably this has meant that many applications for support have had to be rejected. Like all foundations, our budgets are limited and choices have to be made on the best evidence available.

Sometimes transnational criteria also play a part. For example, when first considering requests from the French-speaking countries of West Africa, it seemed sensible to consider the region as a whole at the same time as looking at individual national requests. Before launching the first project a conference was held with the representatives of the blindness organizations from most of the countries in the region. This sort of activity has also taken place in Latin America and southeast Asia in the early stages of project planning. In the case of West Africa, it was possible to envisage a staged provision of production facilities that would eventually become a network across the whole region. Once that had been decided, the choice of countries in which to begin was made on a different set of criteria. Those countries engaged in civil war or political instability had to be put at the bottom of the list. We began with Mali because our French collaborators were based in Angers, which has a twinning relationship with Bamako. They had already been working with the association of the blind in Mali.

Countries like Mali and Burkina Faso are typical of many poorer countries. They have strong organizations of the blind and in both cases have established schools. In Burkina Faso the union of the blind runs a six-classroom primary school, which had at that time about 70 pupils. Between them they spoke 51 languages. In a country of 10 million people it can be safely estimated that there are 25,000 blind children of primary school age. Less than 100 of these were in special education and a further hundred had graduated from the primary school and were integrated into secondary schools, where the classes have between 100 and 120 pupils. At the time of starting the project the total supply of reading materials was produced on two mechanical Braille typewriters.

The development project is in itself not complicated. First of all the support of the institution and the relevant ministries is secured. A suitable
space is identified; it is made as dust-free as possible and air conditioning is installed. Staff are selected and trainers sent from Europe to instruct them in the use of computers in the production of Braille texts. In reality the training has to be done in stages with reinforcement some time after the initial training. The institution provides the wages for the staff and pays for supplies of paper and bookbinding materials. In a relatively short time each of the centers that (have been established) has provided the children in the special schools with Braille versions of the same textbooks as are being used by their sighted colleagues in the “normal” schools. Later on books can be provided to those pupils who are integrated into ordinary secondary schools.

With the help of colleagues from the Institute Montéclair in Angers and the generous provision of tutors by the Federation of Institutions for the Deaf and Blind in France (FISAF), it has been possible to establish Braille production centers in Mali, Burkina Faso, Cameroon, Niger, and Benin. In the future we hope to extend this network to Togo and other countries in the French-speaking region. It is too early to describe these centers as libraries, but they have access through the Internet to databases in France and have already taken the first steps in coordinating their activities so that, over time, they will be able to produce, archive, and distribute Braille files throughout the Francophone world. Already some of these centers are exchanging training, thus reducing their dependence on European support. Recently there has been training across the region in mathematical and scientific Braille, which implies not only training the transcribers but also all the teaching staff, who will have to teach the children to read these new codes.

The notion of a developing regional cooperation has been part of the project development in other regions. Most of the courses in Latin America have involved specialists from neighboring countries. In this way some continuity of knowledge and policy can be spread across the region. In addition, when training does take place in another country it becomes increasingly likely that there are trained personnel there already. As in Africa, local trainers in Latin America are taking over from visiting European specialists. This reduces costs and releases more money for the projects.

In Latin America, southeast Asia, and Africa an abiding problem for education is that each country not only produces its own textbooks but also that these are changed with great regularity. Even with computers the conversion of books to Braille takes time, and because most centers have only two or three transcribers, it may take some time to convert all the books required for any school year. The frustration and waste of resources are enormous when governments announce new book lists just at the moment when the existing list is being completed. It is encouraging, therefore, to note that eight English-speaking countries in West Africa
have recently announced a common exam syllabus. This is providing a strong impetus for the libraries for the blind and the related production centers to produce common materials and avoid duplication of effort. To make such library cooperation effective requires good communication, but regrettably a reliable Internet connection is rare, making the transfer or downloading of files a long, difficult, and expensive process.

Since being established in 1998, FORCE has assisted about fifty production centers, half a dozen audio production units, run courses in graphics, music, pre-Braille tactile books for small children, computer laboratories for the visually impaired, the use of radio for the blind, management of access to literature in libraries, and many other topics. The types of project depend on local conditions and the people running the local institutions. Some projects are heavily interventionist, while others do little more than provide the resources to people who know precisely what they need. All of these actions have been directed to providing print handicapped people with access to the same content that is used by sighted readers. Any success arises out of a partnership between FORCE and the local institutions and wherever possible with other organizations working for the benefit of visually and print impaired people.

**How Can Other Libraries Help?**

First of all take a little time to find out what the real conditions are in the country that you might like to support. Ask the organizations that work in these countries, such as CBM, SSI, Overbroek, HKI, and others, to provide you with up-to-date information.

**Choose a Good Intermediary**

My bias would lead me to suggest the FORCE Foundation as being one of the few that concentrates specifically on libraries, but there are many other national and international groups. Work through them rather than starting to invent the charity wheel again.

**Do Not Donate without Asking**

If you are thinking of making donations of books, whether in print or in an alternative format, please do not. Or at least do not make a donation without taking some elementary steps. It is shocking to find libraries in tropical Africa with bound copies of “The Practice of Tipping in New York. 1979” or “Vegetarian Cooking for Christmas” (17 copies) and the UK government’s paper for elderly people on how to keep warm in winter. There are shelves around the world groaning under the weight of unasked for and irrelevant books that are studiously cataloged, placed in order on shelves, and then never read. The money that is wasted on dumping books that are no longer needed in the developed countries could be better used purchasing things that the libraries really need. If you have books that you can spare, please make a list and send it to your
chosen library. Let them choose any titles that might really be useful and send those. Then they will get something useful and you will not waste money.

*Provide Experts*

One way in which libraries can contribute to the development in other countries is by releasing its own experts for courses being run in developing countries. The transfer of skills both from special libraries and from the more traditional public libraries is essential. Currently it is difficult to find employers willing to release staff, and many agencies have to time courses to fit with the holidays of the experts. It would help if employers could see the release of their staff, on employer’s time and without loss of salary, as a concrete contribution to Third World aid.

*Should You Donate Equipment?*

There is a sort of sexiness about donating equipment. It makes for a good photograph and is more readily recognized than donating money or worse still contributing expertise. Some equipment has such high value that it might be worth all the costs of transport and import duties. A high-capacity Braille embosser might be worth the effort. CCTVs that have been used in demonstrations and offered at a considerable discount proved to be worthwhile even after the added costs of transport. But generally old computers are rarely economic. It is arguably better to buy computers locally, thereby ensuring after-sales service, getting up-to-date machines, and injecting some finance into the local economy. Thus, unless a library is changing major items of equipment, it would be far more useful to conduct some fundraising activities and to donate the money to a library project of your choice.

*Exchange Materials*

As digital technologies become more central to libraries, there are new ways in which the libraries in developed countries could help their colleagues in developing countries. The transfer of a text file, or better still a text and Braille file, to meet the needs of a small production center can be enormously helpful. Because most of these centers are very small, time is of the essence. Even using scanners and computers it takes valuable time to create a file from which a Braille or large print book can be produced. This is in no way to suggest that anyone should contravene copyright or licensing regulations. However, if an established library can allow one of these new production centers to access their catalog and then request such works as they actually need and are free of copyright, then the first steps toward a global network will be taken. The Francophone countries already have the advantage of membership of the Hélène server, which permits access to many French publications for which the rights for use by special libraries have already been cleared. Moves are being made to
set up exchange mechanisms in the English-speaking countries, but in the meantime anything that libraries can do to allow their new colleagues to have texts in a convertible form would be of enormous help.

**Why Bother at All?**

Perhaps this question should have been posed at the beginning of this article, but it seemed better to lay out the issues on the assumption that providing help to libraries for visually impaired people in developing countries is worthwhile. IFLA has already made the arguments about access for libraries and the freedom of each person to read what he or she chooses.

That visually and print impaired people face exclusion from education and therefore much of society in many poor countries is clear. Libraries have little significance for the illiterate, but every chance that is taken to give a visually impaired person the education she needs to be able to read an appropriate alternative format text is a step toward providing that person, young or old, with a better chance in the world. Once educated and literate they can compete for many opportunities with sighted people and become net contributors to society rather than being forced to rely on the charity of others. There are enough examples from the developing countries of blind judges, lawyers, writers, parliamentarians, administrators, and teachers to overcome any doubts about the capabilities of people who are print impaired. They are just as intelligent or stupid as the rest of society in any part of the world.

But for those of us working in the field, all the effort of raising funds, of spending long days in sometimes uncomfortable situations, of learning to be patient with bureaucracies that work to different rhythms are made worthwhile by the sight of children reading their new Braille textbooks or listening to the same books on disc. They know that they are using the same books as the other children and can compete on something approaching an equal basis. Their smiles make the work worthwhile.

**Notes**

1. A list of past and present projects can be seen on the FORCE Web site: http://www.force.nl.

**References**


Richard Tucker retired at the end of 2005 as Deputy Director of the FORCE Foundation, responsible for projects in Africa and the Russian Federation and CIS countries. He was a Lecturer in Film and Television at the University of Bristol, then Senior Assistant Director of the Scottish Council for Educational Technology and on the team that wrote the Library Association/NCET Non-book Media Cataloguing Rules. In 1984 he became Director of Educational and Information Technology at the Netherlands Institute for Educational Media. Then he became head of projects for the Dutch Students Library for the Blind, where he coordinated TESTLAB, CANTATE, and HARMONICA among others, and started the MIRACLE project. Since 1998 he has worked with FORCE. He has written or edited 21 books on library and educational matters, 70 films and media programs, and more than 100 journal and conference papers. In 2004 he was awarded the Ekaterina Dashkova Prize for service to Russian libraries for the blind.
The Role and Activities of the IFLA Libraries for the Blind Section

Helen Brazier

ABSTRACT
The purpose of this article is to introduce some of the issues that blind and other print disabled people face in connection with reading and to explain how this situation influences the role of libraries for the blind. It goes on to describe the structure and purpose of the International Federation of Library Associations and Institutions (IFLA) and its Libraries for the Blind Section, and to highlight the Section’s challenges, goals, and activities contained in its latest strategic plan.

INTRODUCTION: THE ISSUES FACING BLIND AND PRINT DISABLED READERS
There are 161 million blind and partially sighted people in the world (World Health Organization, 2004) who need access to books and information for all the same reasons as sighted people: for lifelong learning, for work, for leisure, and to play a full part in society. To this number, one must add many other people who could benefit from books and information in accessible formats because they are print disabled for reasons other than visual impairment, for example, through motor or cognitive disabilities.

Nevertheless, 95 percent of books in the world are never made available in accessible formats that print disabled people can read, such as Braille, large print, or analogue or digital audio (Kavanagh & Christensen Sköld, 2005). The same situation prevails in all countries, from the poorest to the richest. It is not known to what extent this level of provision meets users’ needs, but it is not equitable. Quite simply, it means that readers with print disabilities do not have the level of choice regarding their reading
that is associated with the International Federation of Library Associations and Institutions’ (IFLA) ambitions to promote unrestricted access to information. Part of the problem is attributable to the cost of transforming print publications into accessible formats, which, despite technological advances, is still high. Also, copyright legislation puts barriers in the way of sharing resources.

The development of the Internet over the last decade has presented new possibilities for information to be delivered to print disabled people at the same time as sighted people. But a survey published by the United Kingdom’s Disability Rights Commission in 2004 found that 81 percent of Web sites do not meet even basic standards of accessibility. Print disabled people are also lagging behind the rest of the world in terms of access to computers. Assistive technology typically entails additional capital outlay equivalent to the price of the computer.

Print disabled people are grossly disadvantaged through lack of access to books and information, and, to make matters worse, the digital divide threatens to exacerbate the situation. Both mainstream and specialist libraries can play a big part in addressing this inequitable situation.

Libraries for the Blind

It is very difficult to generalize about the origins and evolution of libraries for the blind because the circumstances vary from country to country. Articles published in this journal and case studies that have been presented at IFLA conferences illustrate that there are many different models of governing and funding libraries for the blind. In some countries, such as the UK and Canada, specialist libraries for the blind were established by private benefactors as long ago as the nineteenth century, and to this day they are run as charities or voluntary sector organizations. In parts of Asia and Africa libraries for the blind were established by missionaries. In some countries libraries grew out of rehabilitation agencies.

In the United States the government took responsibility for training and educating blind people, and legislation was passed as early as 1931 to provide equitable public library services with support from the National Library Service for the Blind and Physically Handicapped (see article by Frank Kurt Cylke and colleagues in this issue). In Sweden, too, library services for the blind are guaranteed by legislation: the Talking Books and Braille Library (TPB) exists as a separate entity, but it is integrated into state-funded mainstream library services as part of the public library system. In other countries, such as South Africa, similar models exist where the library for the blind is part of the national library service.

Whatever the political context, libraries for the blind are unique organizations because they not only provide library and information services and concern themselves with the usual professional matters, but in many cases they are also responsible for the publication of the books in acces-
sible formats that they provide to their clients. Without this activity there would be very small collections available because in most countries there is a limited commercial market for books in accessible formats.

The most common scenario is that there is one specialist library for the blind in each country, or sometimes there are a few such libraries, specializing in providing books in different accessible formats or meeting the needs of different audiences (children, students, etc). Either way, there is a limited number of providers because there are economies of scale in making and managing specialist collections for an audience that is relatively small and dispersed. The transformation of print materials into accessible formats imposes a high requirement for specialist equipment and skills, and so it is usually more economical to manage services centrally.

Libraries for the blind have to consider how best to deliver services to a remote and scattered client group; how to assist them with the selection of books and information at a distance; and how to provide them with support and the sense of community that a sighted person would get from their public library. In order to fulfil these functions, specialist libraries work more or less in cooperation with mainstream library services such as public and education libraries. In an ideal world, one might argue, mainstream libraries would meet the needs of all potential users. Indeed, it is typically the remit of public libraries to meet the needs of all members of society in a socially inclusive way, although the reality in many countries falls short of the ideal.

It could be argued that the existence of separate libraries for the blind in this day and age is invidious and indeed unnecessary. It is more likely to be technologically and economically possible for publishers and other mainstream brokers of information, such as public libraries, to provide a comprehensive service for all members of the community. At the IFLA conference in Glasgow in 2002, the Libraries for the Blind Section hosted a lively debate on the motion that the existence of separate libraries for special populations is a form of censorship. The arguments raged on both sides. At the end, it was the majority view of the audience that the ideal, inclusive world does not yet exist and that there is still a useful role for specialist libraries for the blind. In practice, models of cooperation between libraries for the blind and public libraries can be quite varied. Presentations at recent IFLA conferences from Trinidad and Tobago, Canada, the UK, Sweden, Korea, and Vietnam have illustrated the different kinds of relationships that exist, ranging from voluntary partnership on occasional projects to full-scale integration backed by government funding.

In the past, libraries for the blind quite naturally tended to focus on the needs of blind people. Increasingly over the years, many libraries for the blind have come to realize that their skills and offerings could be equally useful to people with other kinds of print disabilities. In some cases this
has been reflected in their names—for example the National Library Service for the Blind and Physically Handicapped in the United States and the Talking Books and Braille Library in Sweden. The following sections will show how IFLA and the Libraries for the Blind Section are attempting to address the issues described above.

**The International Federation of Library Associations and Institutions**

To set the work of the Libraries for the Blind Section in context, we first examine the objectives of its parent body, the International Federation of Library Associations and Institutions, known as IFLA. IFLA is the leading international body representing the interests of library and information services and their users. It is the global voice of the library and information profession and an independent, international, nongovernmental, not-for-profit organization. Its aims are to

- promote high standards of provision and delivery of library and information services;
- encourage widespread understanding of the value of good library and information services; and
- represent the interests of its members throughout the world.

In pursuing these aims, IFLA embraces four core values:

- The endorsement of the principles of freedom of access to information, ideas, and works of imagination and freedom of expression embodied in Article 19 of the Universal Declaration of Human Rights
- The belief that people, communities, and organizations need universal and equitable access to information, ideas, and works of imagination for their social, educational, cultural, democratic, and economic well-being
- The conviction that delivery of high-quality library and information services helps guarantee that access
- The commitment to enable all members of the federation to engage in, and benefit from, its activities without regard to citizenship, disability, ethnic origin, gender, geographical location, language, political philosophy, race, or religion

Additionally, in its *Glasgow Declaration of 2002* (IFLA, 2002), IFLA declared that it proclaims ability to access and to express information without restriction to be a fundamental right of human beings. IFLA asserted that a commitment to intellectual freedom is a core responsibility of the library and information profession worldwide. In particular, IFLA affirmed the following:

- Libraries and information services provide access to information, ideas, and works of imagination in any medium and regardless of frontiers.
They serve as gateways to knowledge, thought and culture, offering essential support for independent decision making, cultural development, research and lifelong learning by both individuals and groups.

- Libraries and information services contribute to the development and maintenance of intellectual freedom and help to safeguard democratic values and universal civil rights . . .
- Libraries and information services shall acquire, preserve and make available the widest variety of materials, reflecting the plurality and diversity of society . . .
- Libraries and information services shall make materials, facilities, and services equally accessible to all users. There shall be no discrimination for any reason including race, national or ethnic origin, gender or sexual preference, age, disability, religion, or political beliefs. (IFLA, 2002)

In the Glasgow Declaration IFLA called upon libraries and information services and their staff to uphold and promote the principles of intellectual freedom and to provide uninhibited access to information.

IFLA also supports a series of professional priorities:

(a) Supporting the role of libraries in society
(b) Defending the principle of freedom of information
(c) Promoting literacy, reading, and lifelong learning
(d) Providing unrestricted access to information
(e) Balancing the intellectual property rights of authors with the needs of users
(f) Promoting resource sharing
(g) Preserving our intellectual heritage
(h) Developing library professionals
(i) Promoting standards, guidelines, and best practices
(j) Supporting the infrastructure of library associations
(k) Representing libraries in the technological marketplace

It can be seen from these various powerful statements that IFLA is strongly supportive of equal access to information, which is a highly relevant issue to people who are blind or print disabled and the libraries that serve them.

As its name suggests, IFLA’s membership consists mainly of organizations. At the time of writing, it has 1,700 members. Its work is conducted by these members, chiefly on a voluntary basis, through a program of core activities and through the activities of divisions and sections that focus on geographical or specialist areas of librarianship. IFLA organizes the annual World Library and Information Congress (WLIC) and has an active publishing program.

Comprehensive information about IFLA and its official documents can be found at www.ifla.org.
IFLA’s Libraries for the Blind Section

The Libraries for the Blind Section is one of forty-seven Sections of IFLA and a member of Division III, which represents libraries serving the general public. It is, therefore, particularly well placed to keep up-to-date with developments in, and to engage in cooperative activities with, related areas of library and information work such as public libraries, children’s libraries, libraries serving disadvantaged people, and so on.

“Libraries for the Blind in the Information Age” (Kavanagh & Christensen Sköld, 2005) describes the origins of the Section, which came into existence first as a Working Group in 1978, received Round Table status in 1979, and finally full Section status in 1983. It evolved out of the IFLA Section for Libraries in Hospitals because there was an expressed need for professional training for staff of libraries for the blind and a desire to exchange information and develop standards. The Working Group identified the issues at the time to be

- the need for an international inventory of accessible resources;
- the identification and standardization of production formats;
- the need for an effective international loan system; and
- a coordinated approach to the use of technology.

Although the environment has changed markedly in the last twenty years—particularly in relation to the opportunities resulting from technology—it is interesting to note that all of these issues are still relevant today and are addressed in the Section’s strategic plan.

At the latest reckoning (2005), the Section has seventy-nine members in forty-one countries, including specialist libraries for the blind, mainstream libraries, and library organizations from around the world. Members of IFLA may join two Sections free of charge and others at a relatively small fee, so for some members the Section is the primary focus of their activities and for others it represents one of many interests.

The members of the Section are predominantly based in Europe, North America, and other developed regions of the world. The highest numbers are in the Netherlands, Japan, Canada, Denmark, Spain, and France. To some extent this picture reflects the number of significant library organizations for the blind in those countries, but it also emphasizes the low representation of organizations in developing countries. It is a goal of the Section’s strategic plan to market itself actively to attract new members. The Section also sees value in extending its scope beyond the needs of people who are blind to embrace the needs of everyone who needs accessible library services. Members of the Libraries for the Blind Section believe that blind and other print disabled people should have access to the same books and information at the same time and at the same price as everyone else. The mission of the Section is to encourage
the establishment and development of fully accessible library services to print disabled people.

Like all IFLA Sections, the Libraries for the Blind Section is governed by a Standing Committee of up to twenty elected members led by a chair with assistance from a secretary/treasurer and an information officer. All of these roles are occupied by volunteers, funded and supported by their employing organizations, who receive no remuneration for the expenses that they incur or work that they do for IFLA and who contribute generous amounts of time over and above their paid work. The Section is very grateful to the organizations and individuals who, over the years, have contributed to its activities in this way; indeed, it could not have accomplished so much without them. The Section itself receives only around 300 Euros per year in administrative funding from IFLA and occasional project grants.

At the time of writing, the membership of the Standing Committee consists of 18 people representing libraries for the blind or related organizations in fourteen countries, namely, France (2), Germany (1), the Netherlands (1), Sweden (1), Denmark (1), Finland (1), Russia (2), the UK (2), the Republic of Ireland (1), South Africa (1), Canada (1), the United States (2), the Republic of Korea (1), and Japan (1). As this analysis reveals, there are regions of the world and certain kinds of interests—such as those of developing countries—that are either underrepresented or not represented at all. The need to pay for IFLA membership and fund attendance at meetings and conferences presents a barrier for many organizations in developing countries, and indeed in some developed countries, which restricts comprehensive sharing and participation.

The Standing Committee is responsible for developing and implementing the Section’s strategic plan (IFLA Libraries for the Blind Section, 2006), which is monitored twice a year and refreshed every two years in line with IFLA policy. The goals of the Section are

- to work together with partner organizations to establish a global library for people with print disabilities;
- to establish and support guidelines and best practice for accessible library and information services;
- market and act as advocate for library services for print disabled people; and
- to encourage training and continuing development of library staff serving print disabled people.

As can be seen clearly, the Section’s mission and goals not only conform to, but also actively support, IFLA’s aims, values, and professional priorities and the objectives of the Glasgow Declaration.

Its main concerns are with IFLA priorities (c) promoting literacy, reading, and lifelong learning; (d) providing unrestricted access to information;
(e) balancing the intellectual property rights of authors with the needs of users; (f) promoting resource sharing; (i) promoting standards, guidelines, and best practice, and (k) representing libraries in the technological marketplace.

The Section’s goals are accomplished through an action plan and various methodologies:

- An open program at the annual WLIC
- Biennial Section conferences
- Occasional meetings
- Project work that might involve conducting research or publishing standards
- Communications program
- Participation in other IFLA activities
- Involvement in the management of IFLA

The mixture of activities varies in response to the changing needs and interests of the Section’s members and is strongly influenced by the chair and Standing Committee members. While the Libraries for the Blind Section has many concerns in common with numerous other IFLA sections and a strong track record of cooperation, it also has some unique interests.

RECENT ACTIVITIES

Guidelines and Best Practice

As mentioned above, one of the Section’s goals is to establish and support guidelines and best practice for accessible library and information services. This has been achieved in recent years by a variety of research projects, with direct funding from IFLA more than matched by voluntary contributions in kind from member organizations. The outcomes have been published in IFLA’s professional reports series and have a very practical value. Research into interlending resulted in the publication in 2002 of Resource Guide on Access to and Interlending of Alternative Format Materials compiled by Richard N. Tucker. A major review of earlier guidelines dating from 1983 led to publication of the acclaimed Libraries for the Blind in the Information Age: Guidelines for Development, edited by Rosemary Kavanagh and Beatrice Christensen Sköld (2005). A third major investigation resulted in the publication of Designing and Building Integrated Digital Library Systems: Guidelines by Bente Dahl Rathje, Margaret McGrory, Carol Pollitt, and Paivi Voutilainen (2005). Research projects in progress include work on benchmarking performance standards, led by FNB (Dedicon, formerly the Federatie van Nederlandse Blinden Bibliotheeken), Netherlands, and an investigation of different models of funding and governing libraries for the blind, cosponsored by the British Library and Museums, Libraries, and Archives Council of England.
Conferences provide a useful showcase for best practice and can serve to reach wide audiences. Apart from the conference programs mentioned above, other relevant case studies have been presented at “Accommodating All: Libraries and education in the Digital Age: Serving People Who Are Blind and Print Disabled in the Caribbean and Latin America” (an ACURIL/IFLA LBS conference, 2002); “Partners in Lifelong Learning: Working with Print Handicapped Users” (WLIC, 2003) and “Think Access—Think Libraries,” a workshop organized by the Section for consumers at the World Blind Union Congress 2004.

These standard-setting initiatives have proved very useful for both specialist and mainstream library services by providing a ready source of information and a benchmark by which to assess progress.

The Impact of Digital Technology on Product Development and Delivery

Digital technology has changed the way that all library and information services are organized and delivered, not least library services for the blind. With many libraries for the blind in the unusual position of having to make their own books, the Section has always taken a considerable interest in technological developments that make this process more effective or efficient. Over the years, Section conferences and related exhibitions have demonstrated many innovative projects in the field of Braille production, tactile images, large print, and so on.

Preeminently, the Section was the birthplace of the digital audio book that became known as DAISY, now adopted by over seventy organizations in forty countries worldwide. The development of DAISY into an international standard for digital accessible media by the DAISY Consortium is described in another article in this issue by Elsebeth Tank and Carsten Frederiksen.

The Section continues to focus on harnessing new technologies to deliver better products and more convenient delivery mechanisms. Section members are currently exploring the potential of digital products, digital interfaces, digital file repositories, production and delivery of books on demand, e-delivery, and indeed the future role of libraries in the digital age.

With new and cheaper technology, the traditional model of transcription in anticipation of demand could be replaced by a new model, so that any book could be produced in an accessible format and/or delivered to the customer on demand. The impact would be that 100 percent of customers’ needs could be met, regardless of the actual number of books transformed. But full realization of this ideal scenario is a long way off, even in many industrialized countries. In the majority of the world, publishers are still reluctant to entrust files to well established and for the most part highly respected organizations such as libraries for the blind.

The Section held workshops in Stockport (1999) and Glasgow (2002) dedicated to sharing experiences of digital library development. This topic
is now so fundamental that it is a regular component of all Section conference programs. The pioneering work of the Canadian National Institute for the Blind (CNIB) in developing an integrated digital library system, with support from Microsoft, is described in another article in this issue by Margaret McGrory and colleagues; this project was an impetus for the publication of the Section’s guidelines, Designing and Building Integrated Digital Library Systems, mentioned above (Rathje et al., 2005). The new system was demonstrated at a forum hosted by Microsoft in Redmond, Washington, in November 2004 for members of the DAISY Consortium and the IFLA Libraries for the Blind Section.

Mainstreaming of Accessibility Issues

An emerging trend in recent years has been for the importance of accessibility issues to be recognized by mainstream libraries, at least in part due to legislative steps in North America and Europe toward social inclusion. IFLA itself has taken the point on board with two relevant resolutions recently adopted by Council:

IFLA encourages the use of guidelines on typography and lay out that would make documents and presentations more accessible to the partially sighted. (2004)

Council urges IFLA’s Governing Board from now on to make all IFLA information and publications as well as the website accessible for print impaired people. (2005)¹

It is pleasing to see that the international organization of libraries wishes to set a good example to its members.

With their constantly evolving interest in making information accessible, libraries for the blind have become experts in the accessibility of Web sites. See, for example, “Making Websites and OPACs Accessible,” an article by Marijke van Bodengraven and Carol Pollitt based on a 2003 conference presentation, as well as examples shown at the Section’s Gothenburg conference in 2005. Due to popular demand for up-to-date advice and demonstrations of good practice, the theme was revisited at WLIC 2006 in the Section’s program on “How to Make Your Website Accessible: Issues and Experiences.”

In addition, the Libraries for the Blind Section has frequently cooperated with other IFLA Sections to make sure that new guidelines and standards in all fields of librarianship take into account the needs of print disabled people, for example, by contributing to the Public Library Section’s guidelines and to the Cataloguing Section’s OPAC standards, joint lobbying on copyright issues with the Copyright and Legal Matters Committee, and joint meetings with the Libraries for Disadvantaged People and Public Libraries Sections.

The Section does not confine its collaboration to IFLA but also has
relationships with other relevant international and regional organizations including the World Intellectual Property organization (WIPO), the Universal Postal Union (UPU), UNESCO, the International Publishers’ Association (IPA), the World Summit on the Information Society (WSIS), and certain European projects such as the European Accessible Information Network (EUAIN).

Consultation with user groups at an international level is achieved mainly through cooperation with the World Blind Union’s Committee on Copyright and the Right to Read, which is responsible for relations with IFLA and the DAISY Consortium. At the Union’s Congress in Cape Town in 2004, the Section not only consulted with users at the workshop mentioned above but also contributed to a plenary session on the right to read and library issues.

It is notable how the work of the Libraries for the Blind Section has, in recent years, expanded from the consideration of the issues of concern to special libraries for the blind to those affecting service to blind and print disabled people in mainstream settings and also examining the relationships between specialist and mainstream organizations. Examples include the Section’s workshop in Berlin in 2003 entitled “What All Libraries Need to Know about Serving Print-Handicapped People” and the program in Oslo in 2005 on “Achieving Inclusion through Partnership.”

Lobbying and Campaigning

At national and international levels the Section has worked very actively to win support and secure practical measures from governments and international organizations. Affiliation with IFLA lends a great deal of credibility to the Section’s initiatives in this area. It has been a key goal to influence copyright legislation so that it does not prevent the transformation of information into accessible formats or the international exchange of resources. Working together with the DAISY Consortium and IFLA’s Copyright and Legal Matters Committee, the Section has influenced both the European Union and WIPO. As a result, the latter organization has introduced a model copyright law containing exceptions for print disabled people. Johan Roos (2005) describes the issues in detail elsewhere. Relevant papers can be found amongst the Section’s conference programs “Rights Management in the Age of Digital Content: Enhancing Access for Print-Handicapped Readers” (IFLA Conference 2001) and “The Balance of Copyright and Licensing” (WLIC 2004). A conference paper by Johan Roos entitled “Copyright Protection as Access Barrier for People Who Read Differently” was also published in the *IFLA Journal* (2005). The Section has also successfully collaborated with the World Blind Union to influence the Universal Postal Union to protect the international free post arrangement for blind people.
Working Toward the Global Library for the Blind

There is no country in the world where it can be said that print disabled people have access to an equitable library service, and all libraries for the blind suffer from a lack of resources. Therefore, it is all the more important that libraries for the blind work together to share access to resources. At a forum hosted by Microsoft in Redmond, Washington, in November 2004, members of the DAISY Consortium and the IFLA Libraries for the Blind Section agreed that both organizations wanted to work together toward a virtual global library for the blind and forcefully articulated their vision and the steps that will be required to bring it to reality (DAISY Consortium, 2004). These include joint collection development, better access to catalogs of other libraries, and clear interlending arrangements. The result will be that clients can obtain easier access to books worldwide, and there will be reduced duplication of resources at the organizational level.

There is already a strong precedent for information sharing and collaboration among IFLA and DAISY members. Both networks bring organizations together, and there have been many examples of bilateral and multilateral arrangements of different kinds to share resources and expertise. Libraries have learned directly from each other about library management systems, new technologies, professional practice, and so on. The Section also has a regular francophone subgroup. Any organization seeking new contacts may use the Section’s smartgroup or online directory (ifla.jsrdp.jp/).

Developing Countries

The Section has always had a strong interest in supporting developing countries. Funding barriers may prevent people from participating in Section events, but IFLA’s Action for Development through Libraries Programme (ALP) has attempted to address this issue by providing grants, as has the Swedish International Development Agency (SIDA) and the Force Foundation. The Section seeks interaction with, and stronger participation from, poorer parts of the world. For many years, mid-year Standing Committee meetings were organized in developing countries by invitation from local libraries or associations. The meeting usually acted as a catalyst for a local or regional workshop or meeting. Arrangements of this kind took place in Rabat (2002), Zagreb (2003), and Vilnius (2004). The Section also cooperates with the FORCE Foundation, whose activities are described elsewhere in this issue, by participating in development projects. The Section’s Web site and smartgroup are freely open to all.

The Section has recently teamed with the Ulverscroft Foundation in the UK to offer a global “best practice” award. Two of the award winners so far have carried out useful projects in support of developing countries; Professor Morayo Atinmo of the University of Ibadan, Nigeria, describes
her project elsewhere in this issue. And through this award scheme, Su-
vada Ruvic, a Bosnian librarian living in Norway, secured funding to help
develop the library for the blind in Bosnia.

Staff Development

A key element in all of the work described above is a commitment to
train and develop staff. In general, there are no more than a few librar-
ies for the blind or similar centers of expertise in each country, so the
Section’s activities and offerings provide a vital means of support for the
development of organizations and individuals alike.

Starting from the first expert meeting in Marburg in 1983, the Sec-
tion has organized a specialist conference every two years, most recently
in Washington, DC (2001), Marburg, Germany (2003), and Gothenburg,
Sweden (2005). The next one will be in Grahamstown, South Africa
(2007). Papers are generally posted on the Section’s smartgroup. Attend-
dance is usually about 100 to 150 people. The Section’s conferences, in
particular, are an ideal forum for learning and gaining inspiration from
peers.

The “best practice” awards organized jointly with the Ulverscroft Foun-
dation in 2003, 2004, and 2006 (mentioned above) have provided an un-
usual opportunity for an individual to work for a short period with another
library for the blind in a different part of the world. To date, there have
been five individual award winners, from South Africa, Nigeria, Norway,
and the UK. These work placements have led to strengthened relation-
ships between the libraries involved and provided personal development
opportunities for the people concerned.

It is recognized, of course, that not everybody has the option to travel
to international conferences or to have experience of meeting colleagues
in other countries face-to-face. The Section uses both new and traditional
methods to provide alternative means of support. It publishes a newsletter
twice yearly in English, Russian, and Spanish that is freely available on the
IFLA Web site and the Section’s smartgroup and also available in DAISY
audio or print. Official papers appear on the Section’s pages of the IFLA
Web site (www.ifla.org/VII/s31/index.htm). The Section also maintains a
smartgroup for informal communications and as a file archive, both open
to anyone who is interested on request. Cheaper telecommunications
mean that multilateral meetings by teleconference are also a reality.

Conclusions

Progress toward the Section’s goals can be slow because of the limita-
tions of a miniscule budget and reliance on the goodwill of members who
are all volunteers. But the positive impact of these constraints is that the
strategic plan is closely aligned with members’ concerns and focused on
practical outcomes. And despite the difficulties, the Section has been ex-
tremely active for over twenty years. Has it made a difference to the provision of library services for blind and print disabled people in that period? Members speak warmly of how it has been a meeting point for information and ideas, facilitated learning, and acted as a catalyst for change. It has also acted as a champion within IFLA for the needs of print disabled people, reminding public, academic, and other kinds of libraries around the world that they have print disabled users with needs to be met and demonstrating imaginatively how this can be done.

The Section has also had an immensely important offshoot in the form of the DAISY Consortium. The development of the DAISY standard has been an overriding concern for many Section members in the last decade. All libraries are grappling with the advent of the digital age, and members of the Section have been challenged likewise to find new and relevant solutions by the work of the DAISY Consortium.

But libraries for the blind are facing a few very interesting issues of their own. Can they afford to meet increasing needs from a growing number of people? How can the needs of print disabled people be addressed effectively where existing organizations have a limited mandate to serve visually impaired people? And to what extent can customers really be provided with “the right book at the right time”? Whatever savings can be made through digital management and delivery, it can be anticipated that demand will continue to outstrip supply and rationing may persist in one form or another. There will be a need for advocates to fight for the rights of print disabled people for years to come.

Does the ideal of inclusive library services mean that libraries for the blind will increasingly become production centers, leaving the customer interface and distribution functions to public and other libraries? Or are they destined to become resource and advice agencies specializing in accessibility issues? In Sweden, where this model is most fully developed, the distribution of Braille books has remained part of the specialized central service. Does this pragmatic solution suggest that there are economic or other limits to the level of integration that can be achieved?

There has been much talk about establishing a global repository of accessible books available to all print disabled people who could benefit from them. How are these efforts likely to be affected by the establishment of private repositories by individuals and publishing companies, and by the integration of libraries for the blind into local and national public library systems? And who will pay? Will global aspirations to share resources make it more difficult for libraries for the blind to secure national government funding?

As for the ever-evolving range of formats that provide access to printed materials, what does the future hold? How will blind children acquire literacy? And how will older people who are losing their sight retain it? Braille usage appears to be declining in some industrialized countries
where teaching and support are under threat, but reading Braille confers independence and identity and carries powerful emotional connotations. Blind students generally prefer more navigable digital text. Will the DAISY standard be adopted by mainstream publishers?

There are many pertinent questions, and there will be many different answers in different parts of the world at different times. IFLA’s Libraries for the Blind Section is likely to be the best means at the disposal of librarians around the world to anticipate and respond coherently to change and turmoil. It has already benefited libraries for the blind and millions of readers around the world, and its continued activity provides hope that we can face an uncertain and challenging future with equal success in the future.

Note
1. See the IFLA Web site.
2. Contact the Section’s Secretary for details; current information is available at www.ifla.org/VII/s31/index.htm

REFERENCES


Helen Brazier, MA, MCLIP, joined the National Library for the Blind (NLB) in 1997 and was appointed Chief Executive in 2001. She previously worked in a variety of library and information management roles in the public and private sector and for two years worked as a United Nations Volunteer Librarian in Hanoi, Vietnam. She is a board member of Share the Vision and Secretary of IFLA Libraries for the Blind Section.
Abstract
Libraries for the blind developed as charities, circulating and producing, for the most part, Braille. Their seeking of copyright licenses to permit them to produce such books did not pose any particular threat to copyright holders and publishers. But as they started taking their places as libraries that rendered library services, and as technological developments enabled them to make and circulate accessible books in various forms to readers with different print disabilities, it became difficult for them to have to seek and obtain such licenses for a variety of reasons. Many governments therefore enacted statutory exceptions to their copyright laws to assist them. Some of those exceptions are considered here, with reference to their efficacy. Particular attention is paid to difficulties arising out of those exceptions as they impact interlending services. It is argued that those laws alone do not appear to be at the heart of the problems libraries for the blind experience with regard to interlending. Rather, the delivery of digital materials via the Internet, being entirely different from the delivery of books through interlending arrangements, is creating obstacles that require agreements with publishers, if they are to be addressed.

Introduction
In a letter published in the Times of London on December 2, 2005, Professor J. A. L. Sterling, of the University of London’s Queen Mary Intellectual Property Research Institute, very aptly observed that “In the digital era, international copyright becomes an Augean stable requiring a jurisprudential Hercules to bring order out of chaos” (p. 24). In Greek
mythology cleaning the stable of King Augeas was the fifth task set by Eurystheus for Hercules. This was not just an insurmountable task for a super stable hand: the Augean stable was the largest and filthiest in the then known world. The many goats and oxen that belonged to Augeas had lived there, in the biggest stable ever, without it ever having been cleaned. “The result was a mountain of filth and litter, which not even Hercules could clear away in a lifetime—not, of course, from want of strength, but from want of time” (Francillon, 1896). Professor Sterling was discussing problems arising out of Google Book Search. But he might as well have been responding to a catalog of problems, and the chaos they cause, that plague libraries for the blind with regard to copyright issues.

This article focuses on those problems and how they have come about. It also deals with steps that are being taken, both by libraries for the blind and by the international blindness movement, to resolve them. An appreciation of the nature of work typically undertaken by libraries for the blind, the social environment they operate in, and of how technological change has affected them is however necessary in order to place these issues in their proper perspective.

**What Are Libraries for the Blind?**

*General*

“Libraries for the blind” has become something of an imprecise term, though it will be used throughout this article. It is a term that is nowadays used in respect to different types of institutions responding to ever-increasing and changing types of reading needs.

In an age of political correctness, the reference to “the blind” engenders a measure of discomfort even with those who habitually employ it. But it is a well-entrenched one. “Blind” has—probably without sound justification—become useful shorthand with which to denote varying degrees of lacking visual acuity.

Many such libraries use the term “blind” as part of their name. The South African Library for the Blind, the National Library for the Blind in the United Kingdom (NLB), the Danish Library for the Blind (DBB), and the Dutch Federation of Libraries for the Blind (FNB) are notable examples. Other such libraries are owned by institutions for and of the blind, for example, the libraries of the Canadian Institute for the Blind (CNIB), the Royal New Zealand Foundation of the Blind (RNZFB) and the Royal National Institute of the Blind (RNIB).

The “of” in Royal National Institute of the Blind and Royal New Zealand Foundation of the Blind is a reflection of changing perceptions and circumstances. It represents the notion that blind people have taken ownership of an institute that, in the past, had existed as a charity to serve and identify needs that they themselves are now both determining and serving.
Some institutions—whether by luck or good management is not important for present purposes—have what one might call more modern names, like the Korea Braille Library, the Library of Talking Books and Braille in Sweden (TPB), and Vision Australia Information and Library Service, to mention three examples.

Bookshare.org is a virtual library. It distributes electronic books only, which blind and other readers with print disabilities read with the assistance of computers. It has no premises that house shelves. Even its name suggests that all notions of format are irrelevant, though of course what is decidedly relevant is that there is no room for hardcopy books at Bookshare.org. It is not the contention here that Bookshare.org is a library—neither that it is not. Bookshare.org is an important phenomenon though. It is the logical consequence of doors that have been opened by the digital revolution to people who cannot read print.

Typically, libraries for the blind contend that their current members are not “the blind” per se but all readers with print disabilities (Kavanagh & Christensen Sköld, 2005). In some instances the addition of more than blind beneficiaries of the services of those special libraries are reflected in names like the National Library Service for the Blind and Physically Handicapped of the United States Library of Congress (NLS) and, also in the United States, Recordings for the Blind and Dyslexic (RFB&D), formerly just RFB.

**Braille and the Development of Libraries for the Blind**

The adoption of Braille as a reading and writing medium of blind people has been the catalyst for the proliferation and development of libraries for the blind all over the world.

There were a few libraries and institutions that had made available to blind readers embossed books of various descriptions even prior to the adoption of Braille, for example, the Pennsylvania Home Teaching and Free Circulating Library for the Blind, established by Dr. William Moon and John P. Rhodes in Philadelphia in the 1880s, which contained materials written in Moon type, probably the most durable alternative to Braille (Mellor, 1998). In the late nineteenth century a few libraries for the blind had been established in the United States, but in that country no fewer than five tactile reading systems were in use then, which obviously served collection development poorly. In a letter to the *New York Herald* published on May 31, 1905, Walter G. Holmes wrote in part:

The raised type has given [blind people] a great power to entertain themselves and brighten their hours, but these books are so expensive that only a few of the blind can afford them. For instance Ben Hur in type for the blind costs $10.50. A few cities have libraries for the blind, but very few of the 100,000 blind in the United States have access to them. We are able to buy these books for my [blind] brother, and know-
Helen Keller remarked in 1952, in a public speech at Louis Braille’s re-burial in the Pantheon in Paris together with other French national heroes that blind people owe Braille (1809–1852) what the world owes Gutenberg (Kimbrough, 2005).

Few people realize today that Braille had emerged only in the latter half of the nineteenth century only as the accepted alphabet used by blind people from among more than one contending medium. It was adopted in France in 1854, two years after the death of Louis Braille, soon after that in Switzerland, in the United Kingdom after 1870 only (Kimbrough, 2005)—in a process that culminated in 1905 (Mellor, 1998)—in Missouri (United States) in 1860, and in Boston in the 1870s. It took a long time, however, before Braille became the standard in the whole of the United States. Braille took root there over time. Only in 1932 was a more or less uniform system for English Braille adopted on both sides of the Atlantic (Mellor, 1998). To be sure, there had been tactile books and professional notation long before the invention of Braille, but they had been produced on a very limited basis for educational purposes and for individual professional needs only, like those of the blind concert pianist Maria Theresa von Paradis (1733–1808), for whom Mozart had written a piano concerto, and the blind Lucasian professor of mathematics at Cambridge, Nicholas Saunderson (1682–1739) (Kimbrough, 2005). Embossed books were used more widely for educational purposes; for example, in about 1784 Valentin Hauy, the father of the education of the blind, founded L’Institution Nationale des Jeunes Aveugles (The Institution for Young Blind People) in Paris as the first school for the education of the blind (Kimbrough, 2005). But the later advent of Braille and the devices with which to write it seem to have contributed to the development of book production and libraries for the blind into phenomena that could take their place alongside their more traditional peers because Braille was not, in the words of the blind French philosopher Pierre Villey, a system that “fell into the logical error of ‘talking to the fingers in the language of the eye’” (as cited in Mellor, 1998).

Libraries for the Blind as Charities

Early libraries for the blind were charities (Kavanagh & Christensen Sköld, 2005). In 1932 Lord Blanesburg, chairman of the Ministry of Health Advisory Committee on the Welfare of the Blind in the UK, wrote about charitable work for the benefit of blind persons in these terms:

The affliction of blindness makes an irresistible appeal. The blind can count all men amongst their friends. Their claim upon everything that is chivalrous and selfless in human nature can never be denied.

The record of agencies established, of benefactions made (for the
relief of blindness, for the training of the blind in every variety of useful work, for placing at their service the treasures of literature, and enabling them to exercise their musical, literary, and artistic gifts, for their medical and other care) is a long one, and is confined to no period of history, to no country or continent. The list of those choice spirits who have devoted their lives to the care and education of the blind is as long, and it, too, is limited by no distinctions of race or of creed. In the result, the blind to an astonishing degree have been, and are being, helped to help themselves to be self-reliant and independent, foremost in some walks of life, prominent in many others, efficient in all. The resources now at their service, helped by that strange inward light which seems to cheer and inspire their physically darkened lives, have made of our blind friends to-day the good citizens that they are. (Wagg, 1932, foreword)

Tactile media did not for long remain the only means by which blind people could read. The advent of sound recording technology enabled agencies that, in the words of Lord Blanesburg, placed the treasures of literature at the service of blind people in the form of so-called talking books—that is books that were read by humans and recorded for later use in electromagnetic form.

**Producing Books under License**

The charitable institutions that were to supply blind people with books obviously had to produce those books themselves. Even now, at the beginning of the twenty-first century, both book circulation and book production are considered core activities of libraries for the blind (IFLA Libraries for the Blind Section, 2006). Libraries for the blind are the re-publishers of content in respect of which others—whether authors or publishers or both—hold the copyright. Books for the blind are made accessible to them. In one sense they are copies of the originals, but they are copies to entirely different forms; thus, in another sense they are republications or new editions of those works.

In its most basic sense, copyright embodies the entitlement of the holder thereof to control the circumstances under which the content to which it pertains may be copied, in whole or in significant part. In order to make an accessible copy of a work, a library for the blind or any other producer of that accessible copy must, therefore, obtain a license from the copyright holder that permits it to do so. Otherwise, however laudable the purpose of making an accessible copy, the accessible copy is an infringing copy, that is to say a copy that infringes on the copyright of the right holder. It stands to reason, then, that since the time of their inception, libraries for the blind would, in the main, have done the honorable thing and requested the copyright holder’s permission or license to produce—with or without the payment of royalty—an accessible copy or edition of a work for use by blind people. By and large, licenses were granted.
No doubt the charitable nature of the enterprises requesting such licenses served as an incentive to rights holders to agree to such licenses. But the fact that books for the blind were typically produced in specialized formats played no small part in reaching those decisions. Braille is not a medium that can be put to commercial use. A Braille book, produced for circulation purposes by a library, is unlikely to be sold to the prejudice of its original publisher. It cannot be read by those members of the public who typically buy books. And, most significantly, it cannot be copied by way of a photocopying process. Publishers therefore took no significant risks when granting licenses to libraries for the blind to have Braille books produced for use by blind people. They were being produced in an obscure code, to be enjoyed by people who were perceived as basically needy.

The development of audio recording techniques, which enabled the production of talking books, gave rise, for the first time, to the prospect of the commercial use of books especially produced for reading by the blind. A recording of an audio or talking book could, in theory, be accessed by any member of the public. It could be enjoyed like any other dramatic production that is meant to be listened to only. Like blind people, sighted people also routinely listened to and greatly enjoyed productions, whether of music, poetry, or anything else of mass interest. All that was required was access to the necessary playback equipment. Technology started to emphasize the commonalities between blind people and their sighted counterparts. In a sense, all tools or technologies are invented to overcome barriers or disabilities, whether environmental or physical, so it is not so strange that this development, as others would do later, brought the possibility of solving the problems of blind people within the purview of mainstream technology. But in the context of talking books it was in the interests of publishers especially, but possibly also of the charitable institutions who depended on the alien qualities associated with blind people to raise their funds, that the reading needs of blind people should not be mainstreamed. Doing so would have opened up potential areas of risk to the publishing industry. It raised the spectre of unauthorized use of materials created for the blind by sighted people who possessed the requisite technology.

It is small wonder, then, that producers of literature for the blind took to using specialized recording means. Books recorded on vinyl records were typically recorded at a number of revolutions per minute not commonly used by the producers of commercial records. In later years, audio cassettes were often recorded at half the speed at which commercial tape recordings usually played, and the channels used for stereo recordings were used for the recording of altogether separate sound tracks. In some instances specialized audio cassettes were developed by some libraries for the blind.

Those specially produced sound recordings had one common fea-
ture: they could not be enjoyed without the use of specially developed equipment, which was not commercially available. Reading those books was akin to reading Braille in the sense that what was required to do so might not have been a unique skill, possessed almost exclusively by blind people, but a unique, usually expensive, tool possessed almost exclusively by blind people was required. And so the stage was set for the production of alternative format books for blind people by way of expensive specialized equipment. Cheaper technologies were not widely embraced. The nowaday's almost universally known but nevertheless impenetrable code of Louis Braille became paralleled by idiosyncratic formats and recording techniques in which the commercial world was even less interested than it was in Braille itself. Everybody involved in the publishing industry remained more or less happy to grant licenses for the production of those alternative format books, since doing so remained a benevolent gesture toward a charitable activity, which, although it was publishing properly so-called, remained cloaked in relative technical obscurity. As long as money could be found to manufacture, acquire, and distribute commercially insignificant technology among blind people, nobody—not the producers of alternative formats, nor the publishing industry—had anything to lose.

Yet the people who were the intended beneficiaries of these traditional arrangements—blind people themselves—were also prejudiced by them. Reference has already been made to the expensive technologies necessitated by the measures that were taken to secure the goodwill of the publishing industry. Money that could have been used to produce alternative format books had to be spent on the technology with which to read them. Often blind people could not afford to purchase the equipment they needed. Libraries for the blind therefore had to provide, in addition to the books themselves, expensive machines without which the books could not be read. As time wore on, the route taken with the development of specialized talking books proved costly to libraries for the blind. But there were other disadvantages associated with having to request copyright licenses.

**Disadvantages Associated with Requesting Copyright Licenses**

*Burdensome Terms*

A license embodies the terms upon which the copyright holder agrees to the reproduction of the protected materials in an alternative format. Libraries for the blind, as charities, have no bargaining power when they request licenses. A copyright holder is therefore free to dictate those terms almost unilaterally. So, for example, the library might be required to renew the license request from time to time. This is a strange require-
ment because one would have expected that once the alternative format publication has seen the light of day, the copyright holder, having granted the license under which it has been produced, is not free to decree its destruction if the license request is not renewed.

Copyright holders have also been known to grant a license for the production of a book in Braille but to refuse a license for its production as a talking book. One suspects that this usually happens out of a misplaced hope that if it is not available as a library book to the blind, they will go out and purchase the commercial audio book. A further type of constraint that is imposed from time to time relates to the number of copies that a library for the blind is entitled to produce. Copyright holders appear to forget that librarians for the blind—and not they themselves—are the best judges as to how many copies of a particular work a given library requires. They appear to forget, also, that the likelihood of prejudice to them has little, if anything, to do with the number of copies the library in question produces.

One final example of constraints imposed by copyright holders relates to the geographic area in which the reproduction of the protected work may be circulated. From time to time, it is required of a library that a particular book may be circulated only within the boundaries of the country in which it has been produced. That particular book is therefore out of bounds as available stock when an interlibrary loan request in respect of it is received. The copyright holder prefers that the cost of the books' production in an alternative format be duplicated in the country from which the interlending request emanated, or that the requester should go without, notwithstanding the otherwise ready availability of an alternative format copy.

High Cost

It stands to reason, then, that the cost of copyright administration for libraries for the blind is very high. Copyright administration cannot be managed by clerical staff alone. Permissions requests must be filed properly, renewal requests must be diarized, permissions must be consulted in cases of interlending requests, and if copyright holders do not respond to license requests, further follow-up action is required.

Reference has already been made to various types of recordings that have been used for the production of audio books. Typically, as audio technologies develop and old technologies become obsolete, talking books must be migrated from one medium to another. In each case that necessitates a wholesale migration of a talking book collection, permissions must be consulted on an individual basis in order to ensure that the terms of each given license may be interpreted to sanction the migration of that particular item from one talking book format to another. If not, a new license must be requested. The administrative burden this entails
requires a high level of skill and a considerable amount of hard work in cases of large collections.

Delays

The conversion of a book into an alternative format is a lengthy process. It takes time to narrate a talking book. Narrators are in many instances volunteers who cannot devote themselves full-time to reading books for use by blind people. The process involves both the reading of the text and the editing of mistakes. In some cases, where the materials are complex, some preparation time is required. Once the text has been read, a measure of post-production work is in addition required, after which copies must be made, packaged, and labelled.

For many years, Braille books had to be transcribed manually onto Braille paper or onto plates that were used in the embossing process. Those transcriptions then had to be proofread and mistakes had to be corrected. The work can with justification be described as a labor of monks. The process has to some extent been made easier by digitization. Digital text can nowadays be converted to digital Braille by means of software (Kerscher, 1999). But the digital text nevertheless must be captured, either by way of copy typing or scanning and optical character recognition. Braille is a complex script. Each language has its own code of contractions of frequently used words and letter groups in that particular language. Braille translation software makes mistakes because of the ambiguities inherent in the use of contractions. The word “mother” can, for example, be contracted in the word “smother,” but it would be nonsensical to contract it in the word “chemotherapy” (De Klerk, 2005). To ensure that the final product does not contain mistakes that render the Braille difficult to read, proofreading is therefore still necessary, as it is during the text-capturing process.

All of those steps require time. The conversion process cannot be embarked upon until and unless a license to do so has been obtained. As with any application process, the time delays occasioned by it may vary greatly from case to case, but it can nevertheless be accepted that in the best cases, it adds considerably to an already lengthy conversion process. This means that blind people must wait far longer than their sighted counterparts before they can gain access to particular books they require.\footnote{Student Literature}

Student Literature

Naturally, the problem is a particularly pressing one in the case of student literature. A blind student simply cannot identify prescribed texts on the first day of term and hope to have access to them at the same time as his or her sighted peers. In point of fact, it is impossible to provide students with effective access to required texts if copyright licenses must be applied for in the ordinary course. That part of the production process alone is so lengthy that it disables libraries for the blind as effective sources of assistance to students at any educational level whatsoever. In jurisdictions
where blind students are required to obtain contractual copyright licenses if their study materials are to be converted to alternative formats, those students tend to study by means that are, by and large, illegal.²

Students typically do not require the use of textbooks in their entirety. Any license to produce a textbook in part only is of necessity a more difficult one for which to apply, as it entails having to make a license request that is not a standard one. It cannot be generated from a precedent by someone without experience in such matters. It has to be formulated with reference to the needs determined for the particular course for which the textbook is required.

Mergers, Take-Overs, and Liquidations of Copyright Holders

As a general rule, copyright vests in the author of a published work, but publishers enter into agreements with the authors whose work they publish that provide, among others, for the transfer of copyright in the published works to the publishers on certain terms. To the extent that those terms require a license to be granted both by the author and the publisher, the publisher can and mostly does act as an intermediary between the library for the blind and the author.

The application process can become very complex in cases where the original publisher transfers those rights pursuant to a merger or take-over or if, in the case of smaller commercial concerns, they are wound up and the rights are not disposed of in a manner that makes it possible to trace the current holder. This is not an infrequent occurrence in developing countries. During the year 2005, for example, the South African Library for the Blind identified more than thirty books written in indigenous South African languages in respect to which neither the copyright holder nor the author could be traced. The consequences are tragic for blind people who belong to cultural traditions that still have what one might call, to quote Lord Blanesburg yet again, few treasures of literature.

Newspapers and Magazines

In cases where contractual licenses are required to do so, the production of magazines for the use of blind people is impossible where, as is often the case, those magazines carry syndicated materials over which the magazine publisher may not have further rights of disposition. The publisher could agree to the republication of content produced by the magazine or newspaper itself but not to the republication of syndicated materials. Where the need to procure licenses prevails, libraries for the blind cannot provide their readers with content that is nationally available. Those readers must, more often than not, look to foreign periodicals for their reading requirements. All of these difficulties experienced by libraries for the blind came to be seen by people working in the field and by blind readers alike as barriers to access to information.
Human Rights–Based Perspectives

After the adoption by the United Nations of the Declaration on Human Rights, the second half of the twentieth century saw many traditionally held views reconsidered, many articles of faith either rejected or reformulated, and many social attitudes either reshaped or tempered. Social and scientific communities began reappraising and in some cases reinventing themselves. The world political order underwent radical changes that sent ripples around a world, which became increasingly smaller as the result of technological innovation, and the postcolonial community of nations increased in size and levels of diversity and social mobility. Diversity is currently regarded as requiring accommodation, either because it is a social or political threat or because it is socially desirable to do so. The international consensus is that economic and social development, whether of individuals, communities, nations, or regions, is necessary because economic and social divisions that are too large are bound to lead to unacceptable levels of instability of the prevailing world order. In short, stability is no longer assumed, and change is regarded as the norm, which requires careful management. Little is taken for granted, either in our social or our physical environments. Responses to these societal changes have varied, but constructive ones focus on the evolution of values and philosophies that are appropriate to new conditions. In some cases those values are adopted as constitutional laws. Sometimes they are adopted multilaterally by nations as treaty obligations. Even in countries where they are not codified, such values become commonplace in the press, the speeches of politicians, the writings of public intellectuals, and so on. Even where they are not necessarily actively implemented or enforced, they have become common rhetorical devices of individuals and groups to assert freedoms and entitlements, or perceived entitlements, rather than needs only.

Values that have emerged and are relevant to the present discussion are, for example, entitlements to equality, to human dignity, to access to information—whether for purposes of personal development or to enable people to assert other freedoms or entitlements—the right to self-determination, and access to basic education. Responding to these developments, the international library sector sees itself also as needing to focus on priorities that reflect their impact. The promotion of literacy, reading, and lifelong learning; providing unrestricted access to information; balancing the intellectual property rights of authors with the needs of users; and promoting resource sharing are some of the priorities identified by the International Federation of Library Associations and Institutions (IFLA, 2001) at present.3

People with disabilities have, likewise, developed theoretical perspectives on their own circumstances that are in keeping with these human rights–oriented perspectives. Community-based representative self-help organizations for and of people with disabilities pursue agendas that are
nowadays commonly informed by the philosophy that, rather than focus on the needs of their members and constituencies only, the attitudes of society that contribute to the disabling effects of people's physical, sensory, and intellectual circumstances also require attention. This is sometimes expressed as something of an exaggeration, by saying that the disability movement insists on a move away from the so-called medical model of disability and toward a social model. The objectives of progressive organizations that make disability their core business invariably are all aimed at the ultimate goal of full social inclusion and self-determination of people with disabilities.

Libraries for the Blind and Human Rights

Libraries for the blind are, first and foremost, libraries. Institutions that were founded with very few Braille books and very limited means to buy or produce more of their own now have considerable stock of books in different formats. They are therefore—in many cases—fully fledged members of their local and national library communities, some even of the international library and information services community. Their members require their services not for recreational purposes only but also for professional and research purposes. As societies develop, more and more of their blind members attend institutions of higher learning and pursue professional careers. Even their value to society as providers of recreational reading is on the increase, as, in the developed world, communities begin to age with adverse consequences to the eyesight of many otherwise still healthy individuals who would like to carry on reading.

The governing bodies of many libraries for the blind now have blind people serving in them. In some instances community-based organizations for or of the blind own relatively large libraries for the blind themselves. It is fair to say that blind people have become influential in the running of their own affairs generally and in the management of their libraries as well. It is, therefore, not surprising that libraries for the blind have had to downplay their status as charities somewhat so as not to offend their members.

Libraries for the blind also—in keeping with the value of inclusivity and to broaden their constituencies—seek to develop their readership beyond the category of blind people. People with dyslexia, for example, can potentially benefit greatly from talking books that are routinely made available to the blind, as well as from new technologies that are being taken up by libraries for the blind. Thus, those libraries strive to serve not blind people only but all people with print disabilities.

In many instances governments—for good reason—take an interest in these former charities. In some cases they have become integrated as part of public library services; in some cases they are subsidized; in some cases they are assisted by other means.
Libraries for the Blind and the Digital Revolution

Besides political, philosophical, and attendant cultural developments that characterized the latter half of the twentieth century, the digital revolution also had a profound impact on society, especially during the last two decades. It presented libraries for the blind with immensely interesting opportunities to improve their Braille book production outputs. It also gave rise to fascinating techniques for making talking books more accessible. Blind readers gained almost full access to computers, which changed radically not only the manner in which they do their work but especially the manner in which they read.

Reference has already been made to the fact that, for many years, Braille books were transcribed manually and that nowadays the process has become computerized. While scanning and optically recognizing the scanned images of printed materials for conversion to digital text files is a much faster means of capturing materials that are to be converted to Braille, the production process may be enhanced even further if Braille producers are able to access publishers’ production files rather than to have to capture the data themselves. The input process can thereby be eliminated in its entirety, which would cut down not only on the time previously taken to do so but would eliminate the need to proofread the materials for mistakes other than Braille translation mistakes. Besides saving money, this would, most significantly, save production time (Owen, 2004).

Besides the fact that Braille can be produced much faster if a producer has access to a publisher’s digital text, blind people can, themselves, read digital text straight off a computer. They can do this either by making use of synthetic voice output—in which case the text on the screen is spoken to the reader synthetically—or by making use of display devices that provide them with access to their computer screens by displaying the text in refreshable Braille, that is to say as Braille dots that are continually reconfigured as the display focuses on a different area of the screen. (Both synthetic voice and Braille output devices are driven by specialized software).

The quality of some synthetic voices is extremely high. It is therefore also possible to generate a talking version of digital text as a talking book, that is to say a sound recording of a synthetically read document or series of documents. Talking books that are generated in this way can be produced in a fraction of the time that it previously took to produce the same quantity of material, either as Braille or as a talking book read by a human voice.

There are libraries for the blind who, by arrangement with publishers, can produce overnight, through almost fully automated production processes, either sound recordings of television program listings for multiple channels for an entire month, distributed through the mail on compact
disk, or digital versions of entire newspapers, duly marked up to make them fully accessible to blind readers, who can download them via the Internet and access them with synthetic speech or Braille displays soon after their delivery to the library concerned.

The fact that blind readers have direct access to digital text via computers loaded with the requisite software has interesting implications for libraries for the blind. Braille and talking books are no longer the only media by means of which blind people can read. They can buy print books or borrow them from their public libraries, scan them, and have them converted to digital text, after which they can be read. In addition to Braille and talking books, libraries for the blind can make digital text available to their readers. They can still add value to those files by marking them up to enable readers to access them as sighted readers would navigate books, that is to say to be able to go directly to predefined reference points, like chapters, desired pages, and so on.

In theory, blind readers can acquire books in electronic formats directly from publishers, and depending on the actual formats used, they can access them directly. It bears emphasis that this is a theoretical possibility only at this stage, in part due to file formats used by publishers and, more significantly, because publishers do not routinely distribute books directly to the public (Beckman Hirschfeldt, 2005). Publishers are also notoriously cautious about making any of their products available in digital form. The concern is that digital documents, like sound recordings, can be copied without any loss of quality. The copy is a direct replica of its original. If they do make a publication available in digital form, it is usually protected against unauthorized copying by copy protection measures, which affect the accessibility of the files by blind readers who might need to switch formats for better interaction with their screen-reading software.

But the possibility of direct dealings between blind readers and publishers is important. Libraries for the blind are now more integrally involved in publishing. In a sense they are now bureaucracies that function as intermediaries between blind readers and publishers. To be sure, blind readers cannot read optimally without them: they add value to existing digital text; they convert print to Braille; they convert print to talking books. They provide library and information services to the blind like public libraries do to sighted readers. But they are also duty bound to do the best they can to extract from the world of publishing the maximum possible benefit for their readers and to make it easier for them to acquire access to the books they need and want to acquire, simply because the digital age makes this possible like never before.

The publishing industry, interestingly enough, has also discovered the value of talking books to the general public. There are, therefore, areas of mutual interest between publishers and libraries for the blind like never
before (Ghylling, 2003). No doubt those will increase as an aging public with failing eyesight who are nevertheless still able to read larger typefaces demand from either the libraries for the blind or their publishers books they can still read.

**Copyright Reform for the Benefit of Blind Readers**

In many countries where blind people and their libraries have been able to lobby their governments, copyright laws have been amended to confront the problems experienced with the obtaining of licenses from publishers to reproduce materials in alternative formats, so as to make them accessible to blind readers. Statutory exceptions to copyright protection have been enacted, which provide, under certain circumstances, for statutory licenses to certain individuals and organizations to produce alternative format materials for readers in need thereof (Lung, 2004). These measures are extraordinary in their effect. They constitute radical departures from the accepted norms of copyright protection. They permit the production of accessible materials without recourse to copyright holders. In a sense, therefore, they prevent copyright holders from asserting their otherwise usual entitlements to prohibit the reproduction of the objects of their copyright into alternative formats. A radical analysis would suggest that such measures are akin to expropriations without compensation, albeit expropriations in the public interest, under circumstances where copyright holders would not ordinarily be able to show they would suffer likely financial losses in the result. It is beyond the scope of this article to examine whether, and to what extent, the expropriation analogy is accurate. Such an analysis would, in any event, be futile. Expropriations are regulated very differently in different jurisdictions. If, therefore, the analogy holds, then the question would still arise whether, in a given jurisdiction, the expropriation is nevertheless permissible under the laws governing those matters in that particular jurisdiction. It is worth noting, though, that in the United States the constitutional protection of property is extremely strong, so that nobody may be deprived of property without due process of law.

The expropriation analogy is interesting because in countries where copyright holders are dissatisfied with the statutory exceptions to their copyright protection and where alternative format producers fear that they may be benefiting from measures with doubtful constitutional validity, it stands to reason that they would be likely to interpret their entitlements under those exceptions conservatively. It is clear, though, that countries that do enact such statutory exceptions do not violate their obligations under international law. The Berne Convention for the Protection of Literary and Artistic Works (Berne Convention, 1886) vests the exclusive right to authorize the reproduction of such works in their authors. Authors may and invariably do transfer most of those rights to their publishers. But the
Berne Convention permits states to enact statutory exceptions of this nature. It provides as follows: “It shall be a matter for legislation in the countries of the Union to permit the reproduction of such works in certain special cases, provided that such reproduction does not conflict with a normal exploitation of the work and does not unreasonably prejudice the legitimate interests of the author” (Berne Convention, 1886, Article 9). It seems clear that the benefit of blind readers—indeed of all persons whose ability to enjoy protected works is hindered because of copyright protection—is a so-called special case, precisely because the work, as published, is inaccessible to them. Making a previously inaccessible work accessible seems, moreover, to be perfectly consistent with the normal exploitation of that work. As long as statutory exceptions ensure that such reproductions do not prejudice the interests of copyright holders unreasonably, they will be permissible under the Berne Convention.

In all countries where statutory exceptions have been enacted, cognizance has been taken of the requirement that permissible reproductions ought not to prejudice the interests of copyright holders. Legislation tends to be very specific about the institutions authorized to undertake permitted reproductions. Care is taken to permit such activities by bodies conducted on a not-for-profit basis, or designated government agencies, or specially registered agencies with a licensing authority (Roos, 2005). The principle is that although publishers are not able to make money out of selling their work to blind readers, nobody else can either. But publishers are not precluded by these measures from marketing their wares to blind people. An analysis of a representative sample of such statutory exceptions has been published elsewhere (Roos, 2005). It reveals that, although the problems associated with the procurement of statutory licenses to produce books for blind people have by and large been addressed by them, they have given rise to a variety of other issues that require scrutiny.

Accessibility and Special Formats

In 2002 the Copyright, Designs and Patents Act of the United Kingdom (1988) was amended by the Copyright (Visually Impaired Persons) Act of 2002. According to its long title, the purpose of the amendment was “to permit, without infringement of copyright, the transfer of copyright works to formats accessible to visually impaired persons.” Significantly, this law is based on the assumption that determining what “formats [are] accessible to visually impaired persons” is not a matter of law, but one of fact. The UK Parliament did not lay down what those formats ought to be. In the Copyright, Designs and Patents Act it is permitted, under the circumstances laid down therein, to make accessible copies for multiple people or an accessible copy for an individual (1988, Section 31A(1)). “Accessibility” is the key concept of the amending legislation. This provision should be contrasted with the position in the United States, where reproductions are
permissible only if they are made in “specialized formats exclusively for use by blind or other persons with disabilities” (United States Copyright Act, 1996, Section 121). The specialized formats referred to in the United States legislation are “Braille, audio or digital text which is exclusively for use by blind or other persons with disabilities” (Section 121).

Many libraries for the blind are at present converting their talking book heritage from analogue to digital formats according to the DAISY standard, which is the subject of another article in this issue. Proponents of the DAISY standard like to point out that DAISY is not a format but a standard that incorporates different commercial or proprietary formats. They also claim that DAISY is not only a better way to read but also a better way to publish. DAISY publications can include both audio recordings and digital text that is readable by sighted readers. Although developed primarily with the reading needs of the blind in mind, DAISY strives to be a standard or format that is not for the exclusive use of blind people but for use by all people with print disabilities and, indeed, for all who adopt electronic books as an acceptable reading medium.

The very exciting prospects that the DAISY standard holds for a more inclusive manner of publishing and reading nevertheless raise the potential problem that, in the United States, the production of at least some types of digital talking books may not be covered by the statutory exception that is operative there. Is it the intention with which the books are produced that determines whether or not the exclusive use requirement has been met, or must there be some or other factual link between the medium used and the fact that the readers have print disabilities? The closer libraries for the blind move to mainstream technology, the more problematic it becomes to specify in copyright law that a given exception may apply to specialized formats only.

The Australian statutory exception makes provision for sound recordings, Braille versions, large print versions, and photographic and electronic versions (Copyright Act, 1968). The list is longer than the United States list. The reference in the Australian legislation to large print alerts one to the needs of partially sighted readers. Publishers can provide for those needs themselves, and it is no doubt a potential subject for a fascinating article in its own right.

Electronic or digital text is important, not only because blind people can in principle access digital text via their own computers with screen-reading software but because university students, in particular, actually appear to favor it (Kilmurray & Faba, 2005). Electronic text also provides a solution to the problems of partially sighted readers.

Statutory exceptions that focus on exclusively used formats do not take proper cognizance of the potential for technologies to determine what is and what is not accessible to blind readers at any given time. They also drive up the cost of supplying blind people with reading matter, inasmuch
as they create a need for specialized technology that is expensive because it is not mainstream. They exclude blind people from making proper use of mainstream technologies. Those provisions ought therefore to be discouraged, especially in the developing world where maximal use of commercially available technology is generally encouraged and specialized technology tends to be unaffordable to many.

Retroactivity

As a general rule legislation never applies retrospectively, unless the intention that it should do so is expressed clearly by the legislature. This is fundamental to the rule of law. The reason is that to hold otherwise would be to undermine the legal certainty that people require when organizing their affairs on the basis of their existing entitlements and obligations. The position is not different in the cases of statutory exceptions to copyright protection.

Many libraries for the blind that may now avail themselves of statutory exceptions hold masses of stock that were produced under copyright licenses. The terms of those licenses are not invalidated by the coming into force of statutory exceptions. They can therefore not necessarily be ignored with immediate effect.

The UK statutory exception contains particular provisions that apply to licensing schemes. The general principle is that a licensing contract can override the statutory exception if a library for the blind or other producer of alternative format materials enters into a licensing scheme with a copyright holder, but the licensing scheme may not purport to restrict the terms of the statutory license or have the effect of restricting the statutory license (Copyright, Designs and Patents Act, 1988). These provisions, likewise, do not appear to have retrospective effect. It is therefore possible that licensing schemes in operation prior to the coming into effect of a statutory exception may restrict the operation of such an exception.

Commercial Availability

In the United Kingdom the statutory exception does not permit the making of an accessible copy if there are copies of the work commercially available that are accessible to the same or substantially the same degree (Copyright, Designs and Patents Act, 1988). The Canadian and Australian statutory exceptions contain differently worded provisions aimed at achieving much the same result. The idea behind these provisions is that copyright holders should not be prejudiced if they provide commercial products that are accessible to blind readers. The commercial audio book market has grown substantially in recent years. The thinking is that if blind readers can use those books, they should be bought either by them or by their libraries in much the same manner as public libraries buy print or
audio books. On the face of it, the “commercial availability” requirement does not appear unreasonable. Why should a publisher not benefit from the fact that a library requires a number of copies of its commercially available audio product for use by blind readers?

But there is at present no universal standard for commercially produced audio books. They are available on audio cassette and in competing digital formats. Blind readers who need to avail themselves of the full range of audio books would have to make sure that they have a range of playback tools at their disposal. And besides, none of the commercially available audio books are quite as navigable as a properly marked-up DAISY talking book.

Commercial accessibility is not quite the same thing as navigability. If legislatures mean by accessibility that the book can in principle be read in a linear fashion from beginning to end like an audio tape, then it needs to be stressed here that in the digital age accessibility refers both to having access to content and to having random access thereto. Libraries who have adopted the DAISY standard ought therefore to be able to contend that their talking books are maximally accessible because they enable access to all relevant text elements, like chapters, subheadings, pages, footnotes, sidebars, etc.

But libraries who still distribute materials on commercial audio cassettes recorded in the standard commercial manner would be well-advised to procure copyright licenses as before. The smaller institutions, like the Torch Trust in the United Kingdom, are, therefore, prejudiced in the sense that the larger institutions are benefited by the above-mentioned 2002 amendments while they are not.

The commercial availability requirement makes good sense for publishers. If its implementation causes problems, libraries for the blind would be well-advised to seek ways in which to ameliorate those problems by looking to reformulate or reinterpret relevant provisions. The fact is that libraries for the blind are interested in integrating both their readers with print disabilities and their own services into public library services the world over. This has already been achieved with considerable success in Scandinavian countries and particularly as regards the provision of talking books. Now if a public library supplies talking books that both its blind and its sighted readers can access, why ought some of those talking books to be for use by blind readers only? Should all talking books not in principle be available to all readers of a public library, blind and sighted alike? Whether or not the integration ideal is worth pursuing is not a subject on which a view is taken here. It is suggested, however, that it is patently illogical to argue for inclusion and integration but to trash the commercial availability requirement at the same time. Once a position against integrated public library services is taken, though, on the grounds, say, that blind readers will be the losers due to inconsistent service provision
and because libraries for the blind can advocate better for their reading needs, then the commercial availability requirement can more justifiably be questioned as affording undue protection to publishers and imposing a disproportionately large burden on libraries for the blind, who should be free to spend their scarce resources as they think best.

**Beneficiaries**

In the United States, the above-mentioned statutory exception favors the blind and people with print disabilities, though it would appear that the formulation excludes people with partial sight, who also require the adaptation of reading materials to suit their circumstances. As has been pointed out, large print is specifically included in the Australian legislation, while in the United Kingdom, the emphasis is, quite rightly, on accessibility. Canadian law, interestingly, is formulated to include all people with—as it is put—perceptual disabilities (Owen, 2004). Individuals who pride themselves on being perceptive might have a problem with the term “perceptual disability” and might favor “print and sensory disability.” In Australia print and intellectual disabilities are expressly identified by the prevailing exception. Be that as it may, the Canadian legislation’s merit is that it includes the needs of the deaf community. The Canadian exception is broad enough to cover the translation of a play or television broadcast by an interpreter for persons who are deaf (Copyright Act, 1985, Section 32). Although the United Kingdom legislation focuses on accessibility, the accessibility with which that focus is concerned, is, in so many words, accessibility to blind people only. It is beyond comprehension why such an otherwise progressive approach should have been restricted so as to exclude the needs of others. The European Union Directive on which the legislation was based mandates (but does not compel) the adoption of statutory exceptions “for the benefit of people with a disability, which are directly related to the disability and of a non-commercial nature, to the extent required by the specific disability” (European Parliament, 2001, Article 5(3)(b)). It does not appear to rule out a more inclusive approach.

**Exclusions**

As has already been pointed out, large print is excluded from the United States and Canadian exceptions. So, too, is sheet music and published dramatic works. In the United Kingdom databases and extracts from databases are excluded if the reproductions would constitute infringements of copyright in the database concerned.

**Intermediate Copies**

Since the production of books for people with print disabilities is nowadays digitized, it stands to reason that libraries for the blind hold files that enable the production of distribution copies. Those digital files are essential to the proper maintenance of hardcopy materials. Talking books
on damaged media can be recopied; Braille books with torn pages can be repaired by reprinting those pages; additional copies may be produced on demand if they are urgently needed for, say, educational purposes. Only the United Kingdom legislation makes proper provision for the holding of such “intermediate” copies, as they are termed in the legislation.\textsuperscript{13}

\textit{Altering Typographic Arrangements and Adding Captions}

Braille is a script, but it is not a tactile version of print.\textsuperscript{14} It is therefore an approximation only of the typographic arrangement of a print book. Graphical material is often omitted from Braille, which, incidentally, makes children’s books, especially modern ones, an interesting challenge to libraries for the blind. Descriptive captions are sometimes substituted for drawings or photographs. Tables are—due to space considerations—represented differently from the printed originals. Similar considerations, peculiar to the medium, necessitate deviations from or interpretations of the layout of print materials when talking books are made.

Only the UK exception expressly takes account of the fact that, to make a book accessible, the typographic arrangement may be interfered with, and it provides that doing so would not constitute an infringement of the copyright in the work.\textsuperscript{15} In other jurisdictions libraries would have to rely on interpretations of terms like “specialized formats” and on the spirit of their exceptions.

\textit{Making Accessible Extracts}

Like all students, students with print disabilities more often than not require extracts of books only. Yet if an extract, rather than an entire work, is reproduced, this would in itself constitute an infringement of copyright in the work, unless it is sanctioned by fair dealing or fair use principles.

Under the laws of the United Kingdom and of Australia express provision is made for the making of accessible extracts from published materials. The device used in the United Kingdom was to provide that an accessible copy may also be made from part of a copy.\textsuperscript{16} The United Kingdom provisions do not permit an entire book to be made accessible in part only, so one is probably left with having first to make a partial master copy from the whole book. Making an accessible copy of part of a work (for a person with a print disability or intellectual disability) is expressly permitted in Australia.\textsuperscript{17}

The problem in this context is that it is inconceivable that, for fair dealing or fair use purposes, an accessible extract cannot be made by a person with a reading disability. The situation becomes more complex, though, if it is borne in mind that here an alternative format producer may be required since the reader him or herself may lack the means to make the extract accessible. So the problem cannot be regulated by fair dealing or fair use simplifiers. It is therefore necessary that an exception should clarify the legal position. Where it does not do so, libraries for the
International Interlending Arrangements and Statutory Exceptions

The National Library Service for the Blind and Physically Handicapped of the United States Library of Congress, in a fact sheet dealing with the United States exception to national copyright protection for the benefit of such readers (Library of Congress, 1996), addresses the question of the effect of the statutory exception on interlibrary loan arrangements in the following terms:

NLS currently lends books through interlibrary loan (ILL) to foreign agencies serving blind and physically handicapped individuals. Will this practice continue, or will ILL be limited to books for which NLS has received copyright permission?

NLS will continue to lend to eligible foreign agencies through interlibrary loan. Such distribution is permissible under U.S. law and is unlikely to infringe the laws of other countries. However, foreign agencies must look to the law of the country where the use takes place to determine whether they might be liable for acts of unauthorized importation or distribution of lawfully made copies without permission of the copyright owner.

Yet in April 2004 the General Assembly of the International Council on English Braille (ICEB), meeting in Toronto, adopted the following resolution:

This General Assembly affirms the principle of unrestricted international interlending of reading materials in alternative formats among recognized blindness agencies. Therefore the Executive Committee of ICEB should work through the Braille Authority of North America and with other relevant non-governmental organizations and governmental agencies to give non-citizens of the United States access to Braille and other accessible format materials produced in the United States through the development of appropriate international protocols and legislative change if necessary. (ICEB, 2004, Section 13.0)

But an analysis of the interlibrary loan records of the South African Library for the Blind shows that more books—both in Braille and on audio cassette—are borrowed from the NLS in the United States than from any other library for the blind. What accounts for the perception of the delegates to the 2004 General Assembly of the International Council on English Braille?

The answer probably relates to Bookshare.org, more particularly to its membership eligibility requirements. It will be remembered that Bookshare.org is a virtual library. Members download electronic books from Bookshare.org, which they read by way of computers. Books are contributed by the members (and volunteers) who scan books for their own use.
They upload the digital content to Bookshare.org, who then makes those books available to all of the members. Bookshare.org therefore acts as a central repository for books scanned by the blind community of members, on the understanding that it is time-consuming to scan a book and that once it has been scanned it makes good social sense if many people can benefit from the effort of one.

Of course, Bookshare.org is a publisher’s nightmare. Computer technology turns a single print book into a digital copy, which is made available to multiple recipients. Yet in the United States, where Bookshare.org is based, copyright law permits this. Since the coming into operation in 1996 of the already mentioned United States copyright exception, a legislative amendment known as the Chafee Amendment, it is not an infringement of copyright if certain entities either reproduce or distribute copies or phonorecords of previously published nondramatic literary works, provided that those activities comply with certain requirements. Nonprofit organizations that have, as their primary missions, the provision of specialized services relating to, among others, adaptive reading or information access needs of blind persons or other persons with disabilities, are such authorized agencies (United States Copyright Act, 1996, Section 121(a)). Bookshare.org is a nonprofit agency with precisely this mission. It distributes books uploaded by its members. Those agencies must reproduce and/or distribute books in, among others, “digital text which is exclusively for use by blind or other persons with disabilities” (United States Copyright Act, 1996, Section 121(a)). The digital text that is being produced is marked-up by Bookshare.org in accordance with specifications published by the DAISY Consortium, and it is being read with a text reader that has been developed to read text that has been marked-up in that manner.

Not every blind person may become a member of Bookshare.org. Initially membership was limited to residents of the United States only. (Canadian residents have now been included by special arrangement, but that is not relevant for present purposes). The United States law that permits Bookshare.org to distribute digital books to people with print disabilities has no extra-territorial effect. It applies in the United States only. If Bookshare.org were to distribute books to people beyond the reach of the United States copyright exception, such distribution may therefore be illegal.

As was noted earlier, the Berne Convention sanctions the introduction of copyright exceptions like the Chafee amendment. But the parties to the Berne Convention are states. Individuals do not derive rights from international treaties. The Berne Convention, together with the World International Property Organisation Copyright Treaty, lays down a standard for copyright protection internationally. In effect it provides that a state should not treat authors from other countries worse than it treats its own authors. In the context of copyright exceptions, it provides that it is acceptable—but certainly not compulsory—to enact such exceptions and
thereby in effect to expropriate copyright in special cases, as long as the normal exploitation of their work remains the same and their interests are not prejudiced. So while a state like the United States is free to enact a copyright exception like the Chafee Amendment without conducting itself unlawfully—that is to say without laying itself open to the accusation that it is subjecting authors to measures that are unacceptable to the international community—a library for the blind outside the United States or a blind reader outside the United States cannot, under the Berne Convention, lay claim to the benefits derived by United States residents under the Chafee amendment.

How does it happen, then, that the NLS, a United States government agency, can lend books, produced and distributed in terms of the Chafee amendment, to libraries for the blind in other countries, while Bookshare.org cannot admit as members, residents of those same countries? Is the NLS acting in breach of the Chafee amendment, or does Bookshare.org misunderstand the implications of its provisions?

There is a fundamental difference between what the NLS does and the way it operates and the way in which Bookshare.org does its business. It is based on the fact that the NLS is for all practical purposes a traditional library, with accessible books on its shelves, that operates like a traditional library, both in terms of what it circulates and in terms of standard operating procedures. Bookshare.org is a virtual library. It does not circulate books in the traditional sense. Its operating procedures are therefore completely different. The books that the NLS circulates are of course not printed books, but they are physical objects. They are either Braille books or audio cassettes containing sound recordings of talking books. The NLS also makes available electronic books that have been encoded for printing Braille, which its members can either print themselves or read on Braille display devices, but those files are not circulated in accordance with standard circulation procedures. They are not sent out or physically handed to library members; they are not physically received back at the NLS' circulation desk and checked in and returned to shelves. They are therefore not made available by way of interlibrary loan. Similarly, Bookshare.org does not circulate books. It makes available books that are downloaded, used, and never returned, checked in, and shelved.

The NLS lends books abroad to eligible U.S. citizens and to other libraries, but not to any individuals other than U.S. citizens (Library of Congress, 1990). It lends books to institutions only. In other words, if the NLS lends books abroad that are to be read by blind individuals who are not United States citizens, those books are lent to libraries for the blind only. Those libraries implement their own internal standard operating procedures to ensure that the books in question are lent to their members. They lend them, receive them on their being returned, take steps to recover them if they are not returned, take responsibility for returning
them to the NLS in the United States, and are responsible for all matters incidental to or arising out of the lending transaction and that pertain to the books entering and leaving the country in which they operate. The borrowing library—not the borrowing individual—is the only party with which the NLS deals and who is answerable to the NLS. The NLS does not routinely circulate books in foreign countries. If the borrowing library encounters problems in its own country relating to copyright, more particularly to the possible infringement of copyright, it must solve those problems. The NLS—as a library properly so called—assumes, and is entitled to assume, that the borrowing library takes responsibility for copyright-related issues and, for that matter, for issues relating to controls and financial levies associated in a given country with the entry and exit of goods.

An online repository of digital data like Bookshare.org does not lend physical objects containing data to its users. It makes available, by way of downloads, such data to them. They do not lend it; they acquire it for their own use for an indefinite period, that is to say until such data becomes inaccessible to them due to technological developments that render the data no longer accessible. They may, in terms of their use agreements with the online data repository, agree not to share such data with others, and the repository may employ watermarking or encryption techniques that makes such unlawful sharing either difficult or impossible, but those measures do not detract from the fundamental fact that the data in question is given to and acquired by the user, not lent and borrowed. A copy of it resides on a storage medium in the user’s possession and under his or her control. It becomes either the property of the user or the property of the person who owns the storage device.

The Chafee amendment does not prohibit the distribution of this data to readers with print disabilities, but it cannot permit such distribution to such individuals abroad. The question that logically arises is whether distribution abroad can ever be permissible under the same law just because the data is distributed by way of a physical object to an institution that undertakes to return it.

The differences between the distribution of data and the circulation of objects containing data that are returned are, it is submitted, of considerable importance. First, there is arguably a difference between the distribution and the circulation of data, in the sense that “circulation” is an accepted term used for one of the principal activities that lending libraries undertake. But, of course, it may equally forcefully be argued that “circulation” is a form of “distribution.” Secondly, however, even if the Chafee amendment does not sanction the distribution, it does not prohibit it either. The legal consequence of such a distribution is that the data thus distributed might be an infringing copy according to the law of the country in which it is found.
There is, in practical terms, a world of difference between the NLS providing a library for the blind abroad with a single infringing copy of a particular book and Bookshare.org providing countless individuals in a variety of countries with multiple infringing copies of many different books. The library for the blind in question poses no appreciable threat to the copyright holder in question. It could resolve the matter by way of negotiation; it could clear the circulation with the right holder in advance; it could recall the book and satisfy the demand of the right holder; the right holder might decide not to pursue the matter once the facts are known; and, probably most importantly, the interests of the right holder are not prejudiced because they would not have been prejudiced had the transaction been conducted by a lending library in respect of a printed book.

It is true that publishers have in the past received bad press, but it is fanciful to assume that they have an interest—indeed that they perceive themselves as having an interest—in thwarting interlending transactions concerning alternative format materials. It is different in the case of materials that are made available via the Internet by libraries if they believe that by doing so they are engaging in lending transactions. It is equally fanciful to assume that librarians are incapable of understanding the differences between lending physical objects and making available for indefinite use digital materials for storage by the receivers of such materials.

These practical considerations between what it involves to distribute digital materials via the Internet and to circulate physical objects containing data in either Braille, analogue, or digital formats are of critical importance to the interlibrary loan enterprises of the community of libraries for the blind. In the English-speaking world a considerable amount of resources are of necessity wasted when best-sellers and books considered to be of near-universal value are produced in alternative formats in one country after another. Because of the cost, time, and effort involved in the production process, moreover, blind and otherwise print disabled readers have access to far fewer books than their sighted counterparts. If libraries for the blind were to curtail their interlending activities on the basis of mistaken assumptions as to what they may and may not do with digital materials, the progressive laws that have been enacted for the benefit of blind people and people with print disabilities will turn out to have benefited the production facilities of libraries for the blind more than library members themselves. Libraries for the blind are increasingly converting their talking books to digital talking books that comply with the DAISY standard. Regrettably, there are now libraries for the blind who appear to take the view that because their audio stock is held in digital format only they are no longer permitted to lend those books to similar institutions in other countries.

Apart from the adverse consequences that these attitudes or beliefs have for readers, they are, interestingly enough, also bad for the libraries
for the blind sector. If libraries for the blind are in the future to serve their own local communities only, the case weakens for their continued international cooperation and, by extension, for their status as members of an international community of institutions that contributes to the full social inclusion of readers with print disabilities into the societies in which they live. They would, in the long run, end up yet again as institutions serving quite separate special needs, and those quite separate special needs will be provided for in a quite rudimentary fashion only.

Some Legal Considerations

The emphasis on practical considerations so far is not to be taken to mean that legally speaking, interlending of materials produced under a statutory copyright exception is illegal but that the illegality would likely not be visited upon such actions. But the practicalities are the best guide, to lawyers and librarians alike.

The applicable legal principles are complex, and there may be minor variations from country to country. The point, though, is that even at the level of practicalities alone, it seems that libraries for the blind are applying unrealistic restrictions to themselves and to others with reference to digital materials.

Any book that is produced—or reproduced if you like—under a statutory copyright exception should, by any legal standard, become the property of the producer or the entity that commissioned its production. In most cases, therefore, a library for the blind would become the owner of such a book. Most legal systems acknowledge that the owner of property is entitled to sell such property to whomsoever the owner pleases. It is no different in the case where the property is a medium such as a book, the contents of which is subject to copyright protection. In the United States, this principle is expressed by way of what is known as the “first sale doctrine” (United States Copyright Act, 1996, Section 109); in continental legal systems it is known by the label of “exhaustion” (of rights).

Of course, most statutory exceptions expressly rule out sales for profit, but that is as far as they go. They say nothing about an entitlement to lend those materials. It therefore follows that a lending right survives intact. But having established that the lending right is not affected by a statutory exception, one should nevertheless bear in mind that most legal systems are sensitive to the fact that their copyright regimes may differ from the ones that apply elsewhere. And so they typically contain provisions intended to take care of the possible adverse consequences of those differences for copyright holders who reside beyond their jurisdictions.

In South Africa, for example, an infringing copy, that is to say a copy that infringes the rights of the copyright holder, is, among others, an imported article, the making of which “would have constituted an infringement of . . . copyright if the article had been made in the Republic.” (Copyright Act, 1978, Section 1).
United States law, similarly, bars the importation of copies or phonorecords that may have been made legally in their country of origin but that would have been made illegally had United States law been applicable (United States Copyright Act, 1996, Section 602(b)). Interestingly, libraries and related institutions are partially exempt from this provision.20

In South Africa importation of an article protected by copyright is not an infringement of such copyright if the article in question is imported for private and domestic use, even if to the knowledge of the person who imports it “the making of that article . . . would have constituted . . . an infringement [of copyright] if the article had been made in the Republic” (Copyright Act, 1978, Section 23). No special provision is made for libraries in this context. So in South Africa, two apparently contradictory principles apply. It is, on the one hand, an infringement of copyright if a particular book is imported if it originated under circumstances that would have infringed copyright if South African law had been applicable, but on the other hand, if it is protected by copyright in its country of origin, importing it for personal use—that is to say use that is noncommercial and does not prejudice the copyright holder—it is lawful to do so without a copyright license. Which one is the overriding principle? Is it always unlawful to import—even for temporary and noncommercial purposes—a copy that otherwise qualifies as an infringing copy, or does the noncommercial character of the transaction play a part in the weighing up process?

From a pro-copyright perspective the question whether or not it qualifies as an infringing copy will no doubt guide the interpretation, while from a human rights–based constitutional perspective a variety of other considerations may likewise be invoked to argue for the proposition that a library for the blind does not break the law if it engages in interlending transactions concerning books produced under statutory copyright exceptions. It is conceivable that in a given country no copyright protection measures may exist, and that would complicate the equation somewhat. But the likelihood of such a country having a library for the blind or like institution that produces books others might want to borrow, indeed the likelihood of likely borrowers becoming aware of the existence of such books, is negligible.

Ordinarily, libraries cannot afford litigation, and they tend to avoid it if they are in doubt as to the legality of one or other of their practices and are requested by a rights holder to desist. But these are not ordinary matters. They affect access to information issues concerning marginal communities who strive for full inclusion, which do not pose substantial threats to copyright holders or the principles underlying copyright protection more generally. All that one needs as a library in a case like this is an arguable, potentially tenable point of view with realistic prospects of success and—
most significantly—a community that will expect of it to advance that case
and, if necessary, will pledge financial support for its doing so.

**Interlending and WIPO**

The libraries for the blind community are not oblivious to the problems
brought about by either the digital revolution or statutory exceptions, de-
pending on one’s point of view. Neither is the DAISY Consortium. Nor
is the international blind community, as represented by the World Blind
Union (WBU). But there is a limited understanding of either how these
problems came about or of how best to address them.

Working through the World Intellectual Property Organisation
(WIPO), the WBU, the DAISY Consortium, and the Libraries for the
Blind Section of the International Federation of Library Associations and
Institutions (IFLA) appear to have achieved an understanding that what
is required is a large-scale revision of national statutory copyright excep-
tions to make provision, additionally, for importation entitlements (King
& Mann, 2004). WIPO itself has contributed to this consensus by suggest-
ing what one might term a model provision to this effect. It is important
to emphasize that WIPO can at best advise members of the international
community. As regards copyright matters, such advice is apparently pro-
vided to especially the developing world by making available a draft copy-
right law to serve as a precedent for those countries that are of a mind to
enact all or some of its provisions. It therefore serves little purpose to ana-
lyze the draft law here because the answer to any weakness that one might
be able to identify is bound to be that countries do not have to enact the
problematic provision as it stands. It should also be noted, in passing, that
much as an importation rights clause is suggested by WIPO as a solution
to the problem, WIPO has, for some time, not seen fit to publish such a
provision on its Web site, though very particular draft wording has been
touted in that regard. This means that in reality, there is nothing of sub-
stance to analyze. A few observations of a general nature are nevertheless
worth making in this context.

The importation rights idea presupposes a substantial measure of simi-
liarity between statutory exceptions. It is based on the assumption that if
a statutory copyright exception in one country has permitted the pro-
duction of a book in an alternative format, it would also be permissible
in another country that applies a statutory copyright exception. In the
United States, as has been noted, sheet music and published dramatic
works are excluded from the local statutory copyright exception; in the
United Kingdom databases are expressly excluded; in Canada the produc-
tion of large print books is impermissible under the copyright exception
that applies there.

The wording that is being suggested in WIPO circles reads:
...it shall be permitted without the authorization of the author or other owner of copyright to reproduce a published work for visually impaired persons in an alternative manner or form which enables their perception of the work, and to distribute the copies exclusively to those persons, provided that the work is not reasonably available in an identical or largely equivalent form enabling its perception by the visually impaired; and the reproduction and distribution are made on a non-profit basis.

The distribution is also permitted in case the copies have been made abroad and the conditions mentioned above have been fulfilled. (as cited in Garnett, 2006, p. 97)

In neither the United States, nor the United Kingdom, nor Canada would one be able to enact that particular wording wholesale. This does not mean that the idea that underlies the draft wording cannot be enacted in a manner suitable to the legislative drafting conventions that apply to the copyright laws in a given jurisdiction. But what is the good of suitable wording? What is the United States legislature to do? Ought it to permit only the importation of works that would have been lawfully produced had the United States law applied, or ought it to set another measurable standard by enacting a principle rather than express provisions dealing with particularly identified cases? Is a play that has been made accessible in the United Kingdom to be excluded? Is the Canadian legislature supposed to show more understanding for the needs of partially sighted Canadian readers to borrow large print books from abroad than to have them produced locally? Or was the local provision in Canada the result of publisher submissions that would not apply to large print books held by other libraries for the blind already?

Finally, the reference to importation, without more, seems to beg for clarification. Clearly there are, as the above analysis suggests, appreciable differences between the purposes for which goods, even books, are imported; and clearly they matter because some purposes would prejudice or potentially prejudice the interests of copyright holders while others would not. And, if a degree of similarity between country A and country B’s exceptions is required, who will be the judges? Whose task will it be to decide whether the provisions of one country’s exception are to be squared with those in the importing country? Do interlibrary loan librarians have to become experts at legal interpretation?

Legislative drafting hardly ever gives expression to ideals, unless ideals are expressly being enacted, and then those provisions look nothing like the ones suggested by WIPO at present. What is required is not legislation aimed at painstaking comparisons between the statutory copyright exceptions that apply in various countries. All that might be required, in some countries at any rate, is some clarification that libraries are protected if they import books that have been lawfully produced under the copyright
laws of their countries of origin, provided that the country of origin is a member of the Berne Convention. This qualification would at least ensure that in the country of origin acceptable standards of copyright protection are adhered to.

**Document Delivery via the Internet**

Electronic delivery of documents is important, both because it affects future service delivery models and because digital text is particularly significant to blind and other readers with print disabilities. As we have seen, the problems associated with document delivery via the Internet are complex. Bookshare.org deserves credit for not only realizing that there are additional challenges involved in delivering digital books to readers with print disabilities all over the world but also for having set about dealing with those challenges. Speaking at the Second World Summit on the Information Society in Tunis, its founder and president, Jim Fruchterman (2006), set out his approach succinctly, as follows:

The second approach [apart from copyright reform] is getting permissions from authors and publishers, but with a much broader approach to permissions than today’s. The typical approach to permissions—the approach we used until last year—is to get the narrowest possible permission: limited to our organization, our clients, and our country. But, if we agree about the vision of building a global library that makes access for the disabled as easy, cheap, and fast as that for the nondisabled, we must take a broader view.

Our new permissions form asks publishers and authors to give us permission to provide access to people with disabilities around the world and to work through other nonprofit or government agencies similar to our nonprofit organization. It also asks them to grant permission for us to work directly with third parties such as Amazon and Google who are scanning their books. It does not limit our work just to the visually impaired but to all people with disabilities that significantly impair their ability to access print. And it asks that these permissions be granted royalty-free. Publishers and authors are generally willing to grant such permissions. They want to hear a few things from us:

- That we will limit access to people with bona fide disabilities
- That we will work hard to ensure that the books do not leak out into the mass market
- That we will support them in prosecuting people who violate copyright law by distributing such books illegally

Authors and publishers want to do the right thing but want to be reassured that their commercial interests will not suffer. That’s the essence of the social bargain in copyright law, and if we honor it in the permissions realm, we can achieve much more. The moment I receive a global permission from an author or publisher, I can distribute that book to any person with a print disability in any country in the world. In practice
we need to work with our counterpart agency in that country to ensure that the social restrictions are complied with and that we are serving people with bona fide disabilities.

Already we have received such permissions for more than one thousand books that are currently on Bookshare.org, as well as for another two thousand books that will be added to our collection over the next six months. Of these books two thirds will be in English and one third in Spanish. We are getting ready to serve the world.

But our efforts are not enough. The global library is not an American library. It is not an English- or Spanish-language library. We need our peers in countries all over the world to secure as many similar permissions as possible and pass as many of those copyright law exemptions as they can. By working together and by sharing, we can build the global library. Together we can assure that people with print disabilities in the next decade will have access that is as easy, cheap, and fast as for everybody else on the planet.

The fact that libraries for the blind and otherwise print disabled people can put digital materials to good and almost immediate use is highly significant. As has already been indicated, access to digital materials can radically reduce production time and effort. It brings mainstream publishing and accessible publishing closer together (Kerscher & Fruchterman, n.d.). Digital publishing is also a better way to read for people with print disabilities. Bookshare.org’s focus on licensing arrangements in respect to digital materials that are to be delivered via the Internet is clearly a step in the right direction. Access to digital materials is greatly facilitated by having those materials available online; similarly, the electronic delivery of digital materials are a much cheaper and speedier delivery method for libraries for the blind in the digital era.

As has been pointed out, research suggests that particularly blind students with access to computers prefer digital text to any other reading medium for people with print disabilities. The popularity of digital text with that generation indicates that it will, in the future, become even more important for libraries for the blind to be able to make materials available as digital text.

The significance of access to digital text for educational purposes has also been acknowledged by the United States Congress. The Individuals with Disabilities Education Improvement Act of 2004 makes provision for a national instructional materials accessibility center, whose task it is, among others, to establish a national instructional materials accessibility standard. Publishers of educational content will be compelled to make their materials available in a digital form that complies with this standard.

Likewise, the directive of the European Union referred to above provides that if member states provide in their copyright legislation for statutory exceptions,
Member states shall take appropriate measures to ensure that right-holders make available to the beneficiary of an exception or limitation provided for in national law . . . the means of benefiting from that exception or limitation, to the extent necessary to benefit from that exception or limitation and where that beneficiary has legal access to the protected work or subject-matter concerned. (European Parliament and Council, 2001, Article 6(4))

In Europe, as in the United States, publishers are beginning to understand the needs of readers with print disabilities to be granted direct access, or access via their libraries’ intervention, to digital materials. This much is evidenced by the establishment of the European Accessible Information Network, a collaborative venture between leading libraries for the blind and prominent publishers, with the view to exploring accessible publishing and the standards to which such publishing should conform.

Although it has become commonplace to adopt the position that, with regard to copyright in the digital age, “digital is not different,” this maxim tends to obfuscate the very real problems associated with the electronic delivery of digital assets. Also, the problems experienced by the entertainment industry in this regard are not the same as those of libraries for the blind. In the prior case, the threat of perfect copy quality suggests a cautionary approach. In the latter case, the lending and returning paradigm associated with libraries is no longer valid unless more technology is brought to bear and the fictions of lending and borrowing are employed.

Are licensing arrangements like the ones proposed by Bookshare.org a retrogressive step? Are we reverting to the stage when charities sought licenses as favors or against the payment of royalty from publishers? Libraries for the blind are nowadays professional institutions that use highly sophisticated mainstream techniques, rather than Braille only, to secure access to information for communities with very diverse needs who demand to be included where practicable. The degree of sophistication and the range of reader demand is demonstrated by the fact that nowadays the search is one for a solution to an international problem rather than to national problems only. It is quite logical that best practice in this area would begin to develop out of bilateral and multilateral contractual licensing arrangements. A no “importation rights” clause in a local law will definitively solve the problems associated with electronic delivery of digital books across international boundaries without publisher collaboration.

Copyright Protection Technology

Publishers that make digital text available on a commercial basis often employ technology to protect such materials against unauthorized copying in order to safeguard their copyright-protected interests in the digital
environment. The implementation of some of those protection mechanisms have on occasion resulted in an otherwise accessible digital document becoming inaccessible to blind readers or to alternative format producers.

Reference has already been made to the EU Directive on Copyright, which obliges EU members that enact statutory copyright exceptions to enact appropriate further measures to ensure that copyright holders make the means available to beneficiaries of such exceptions to access materials in their lawful possession. The statutory copyright exception that was enacted in the United Kingdom pursuant to the EU Directive provides in this regard:

If the master copy is in copy-protected electronic form, any accessible copy made of it under this section must, so far as it is reasonably practicable to do so, incorporate the same, or equally effective, copy protection (unless the copyright owner agrees otherwise). (Copyright, Designs and Patents Act, 1988, Section 35B(8))

The technology used for digital rights management purposes, that is to say to avoid or detect unauthorized copying or to prevent unauthorized access, cannot in and of itself be analyzed from a legal or even a political perspective. Good technology that achieves its purpose yet does not prevent lawful access seems unobjectionable. Unintended consequences of the deployment of such technology may give rise to different issues, depending on the technology used. In each case the question should be whether access is indeed difficult or actually impossible. In each case the question is whether libraries for the blind might overcome those difficulties by investing in technology themselves or whether better screen-access technology for use by people with print disabilities might solve those access problems.

Libraries for the blind might need to apply similar technologies themselves. In this regard a single note of caution seems in order. Libraries for the blind should take care that their digital rights management mechanisms do not force their readers to purchase equipment supplied by them or especially sourced by them. Different countries have different unlawful competition legislative regimes, but it seems fair to say that an unlawful competition charge by an alternative provider of access technology is something any library for the blind ought to avoid. The print disabled community is relatively well informed. Not even supplying an essential service is necessarily a safeguard against the loss of reputation that might result therefrom (Roos, 2005).

CONCLUSION

At the beginning of the twenty-first century, copyright is enjoying much academic, as well as political, attention. Libraries for the blind would do
well to consider what it is exactly that is being contested in this arena. In much of the developing world, libraries for the blind are still seeking to advance the case for statutory copyright exceptions to benefit readers with print disabilities; in the developed world, such exceptions apply in many countries already, and libraries for the blind are negotiating with the publishing industries in their areas of operation about collaborative arrangements, standards, and permissions.

It is an open question whether libraries for the blind have much to gain from being engaged in current public debates concerning copyright protection in general. No doubt the advent of new technologies have re-opened the debate about the legitimate balance between the rights of content creators and the legitimate public interest, and no doubt libraries for the blind and their readers stand to gain from any enlargements to the public domain. Still, they have a cogent case to argue based on particular access needs and particular technological opportunities. Theirs is not a case concerning abstractions but a coherent set of ideals, underpinned by highly specific business models and ethical standards. They therefore have difficult decisions to make. Are they better off joining loosely structured lobbies, or should they pursue their solutions quite separately from current public debates? Whatever the choices made, it is important for libraries for the blind to maintain their own views, not only on what they require but on the best way to achieve those requirements.

Libraries for the blind have much to offer both publishers and their own readers. Their grasp of technological issues concerning accessible publishing might in fact help the publishing industry to access a hitherto untapped market. Their expertise regarding the accessibility of digital materials will, even in such a case, enable them to add value to the digital materials obtained from publishers, and so to provide blind and print disabled readers with the best reading experience that is possible. Moreover, as soon as some degree of consensus between publishers and libraries for the blind emerges concerning the electronic delivery of digital content across national borders, the way will perhaps be cleared for the first time for a truly global library for the blind.

Notes
1. Interestingly, delays of this nature are the only reason, and therefore presumably the primary reason, that is cited by the National Library Service for the Blind and Print Handicapped of the United States of Congress as a justification for the amendment, in 1996, of U.S. copyright law to benefit alternative format book production. See Library of Congress (1996).
2. Some may argue the proposition in the text to have been overstated. I borrowed numerous textbooks that were read to me on audio cassette by volunteers, which may have been consistent with the normal exploitation of the book, but I kept many of those books for later use, which seems to me to have challenged the boundaries of copyright more than a little.
3. The right of access to information is enshrined in Article 19 of the United Nations Declaration on Human Rights. Libraries and their umbrella organizations and the activities of such organizations are therefore very central to the contemporary human rights model.

4. A notable exception is Sweden. Ingar Beckman Hirschfeldt (2005) points out that from July 2005, as the result of an amendment to the copyright law of Sweden, people with print disabilities are able to buy adapted books.

5. An impressive, but by no means exhaustive, list of such exceptions is provided by Geidy Lung (2004).

6. The Republic of South Africa Constitution, Act 108 of 1996, provides in section 36(1) that even fundamental rights may be limited by law of general application “to the extent that the limitation is reasonable and justifiable in an open and democratic society based on human dignity, equality and freedom.”

7. The United States Constitution Fifth Amendment reads: “No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a Grand Jury, except in cases arising in the land or naval forces, or in the Militia, when in actual service in time of War or public danger; nor shall any person be subject for the same offence to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.”

8. For Canada, see generally the Copyright Act (R.S., 1985, c. C-42, s. 32; R.S., 1985, c. 10 (4th Supp.), s. 7; 1997, c. 24, s. 19), especially section 32(3). For Australia, see Copyright Act 1968, section 135ZP; also sections 40ff with regard to fair dealing.

9. In Canada a perceptual disability is defined in the Copyright Act as “a disability that prevents or inhibits a person from reading or hearing a literary, musical, dramatic or artistic work in its original format, and includes such a disability resulting from . . . severe or total impairment of sight or hearing or the inability to focus or move one’s eyes, . . . the inability to hold or manipulate a book, or . . . an impairment relating to comprehension.” Notwithstanding this definition with its all-embracing tone, people with partial sight are excluded.

10. Copyright Act, section 112(a)(ii) and (b)(ii) regarding intellectual disabilities; section 135ZQ(1) regarding print-disabilities.

11. Article 5(3)(b). Article 5(4) and article 5(5) deal further with the distribution of such books.

12. Copyright, Designs and Patents Act, section 31A(2) and 31B(2). Also excluded are instances where musical works are to be copied but where doing so would involve a performance thereof or part thereof.

13. Copyright, Designs and Patents Act, Section 31C. It permits approved bodies to hold intermediate copies, which are necessarily created during the production of accessible copies. Such intermediate copies may be held only for the purpose of making further accessible copies and only for as long as the approved institution remains entitled to do so.

14. UNESCO has endorsed Braille as the only tactile script parallel to print. See Kavanagh and Christensen Sköld (2005).

15. Copyright, Designs and Patents Act, section 31A(1) and 31B(1). The legislature does not appear to have expressly taken cognizance of the fact that pictures, photographs, and the like may be omitted from the accessible copy; nor of the practice of adding, in appropriate cases, descriptive captions to pictures, but, then again, it authorizes the making of an accessible copy, which arguably covers those instances also.

16. Copyright, Designs and Patents Act, section 31A(1) and section 31B(a).

17. Copyright Act, section 112(a)(ii) and (b)(ii) regarding intellectual disabilities; section 135ZQ(1) regarding print disabilities.


20. In section 602(a)(3) provision is made, among others, for libraries’ interlending services. Those institutions are restricted to five copies.
21. Copyright, Designs and Patents Act, section 31A(1) and 31B(1).
22. For the work of the committee that is developing the National Instructional materials Standard (NIMAS), see http://nimas.cast.org.

REFERENCES


Berne Convention for the Protection of Literacy and Artistic Works (1886).


King, S., & Mann, D. (2004, August). Copyright: How can barriers to access be removed? An action plan for the removal of some copyright barriers that prevent equitable access to information. Paper

Johan Roos was Director of the South African Library for the Blind for three years. During that time he was particularly interested in a comparative study of copyright exceptions for the benefit of people with print disabilities and in the challenges raised in that context for interlending by digitization. He served briefly as Chair of the Standing Committee of the Libraries for the Blind Section of IFLA. Prior to that he had been a legal academic and practitioner and he directed an office of the Legal Resources Centre, a human rights law firm. He has previously written on labor law, informal housing, land reform, secured creditors in the event of insolvency, and copyright, among other topics. Since June 2006 he is a business tax specialist in the legal and policy division of the South African Revenue Service.
Resource Discovery: Catalogs, Cataloging, and the User

Ann Chapman

Abstract
This article considers resource discovery from the viewpoint of visually impaired people. Starting with the tasks of find, identify, select, and obtain, it examines how catalogs can be enhanced to assist visually impaired users. It then looks at the inclusion of specific data within catalog records and how they help the user. This is followed by some reflections on display issues and a reference to the need for accessibility in catalog systems. It concludes that improvements for visually impaired people provide features that sighted people will appreciate as well.

Introduction
In 1999, when I first started working with visually impaired library users, I discovered some disturbing facts about the challenges this sector faces to identify, locate, and obtain resources. Of the current UK publishing output of around 100,000 titles per year, less than 5 percent will be put into an accessible format. In many cases the title will only be put into one accessible format, which the user may not be able to read. While there are some UK commercial publishers of accessible formats (for audio, large print, and e-books), many transcriptions are created, lent, and sold by small voluntary bodies. Public libraries do provide some accessible formats, predominantly large print and audio books, but collections are often small.

It was difficult for people to find what was available. The Royal National Institute of the Blind (RNIB) had created the National Union Catalogue of Alternative Formats (NUCAF), but it had insufficient resources to maintain it. This meant that the catalog became increasingly inaccu-
rate regarding holdings; in addition, people could only consult it through RNIB Customer Services and not directly. Other accessible format collections maintained their own catalogs; a few used a MARC format, but many did not because organizations in this field tended not to employ people with either library qualifications or even experience and were often reliant on a small volunteer workforce. Although databases were used, one small producer at that time relied on a Word document with authors’ names arranged alphabetically by their first name for its “catalog.” Collection holders were not unaware of the problems, but they had neither the funding nor the expertise to change things. The result was that to find out if an item they wanted was available, users had to (a) know about all producers (113 UK producers identified in 2005), (b) approach them individually either for catalogs (which might or might not be in their preferred accessible format) or to request customer services help to search databases on their behalf, and (c) attempt to search public library catalogs that were not specifically designed for visually impaired users.

The launch of Revealweb1 in 2003 has helped by providing a Web-based union catalog that can replace NUCAF in the UK (Chapman, 2004, 2005). Users are now able to search the catalog for titles held by all known UK producers and to initiate a request for an item. However, working on the design for the Revealweb catalog required the project team to consider how catalogs support visually impaired people (VIP) in their searches for resources and information.

Designing a catalog with visually impaired people in mind requires considering several aspects. The content of the bibliographic records must contain appropriate information to support both filtered and unfiltered searching and record display at different levels. Record displays must contain sufficient information to enable the user to decide whether an item is suitable for her purpose. Access points must enable the user to search from a variety of starting points. Finally, the catalog itself must be accessible and have easy navigation.

**Resource Discovery**

Resource discovery is the process by which users (whether sighted or visually impaired) find the items they want in a format they can use. A study on the Functional Requirements for Bibliographic Records (FRBR) (IFLA Study Group, 1998) identified the four functions of bibliographic records as *find* resources corresponding to stated search criteria; *identify* a resource as the document sought, or distinguish between one or more items with the same title; *select* a resource appropriate to the user’s needs; and *obtain* access to the resource.

Visually impaired users have the same resource discovery requirements as sighted users, since the visually impaired population in any developed country usually mirrors the overall population of that country in terms of
gender, numbers in education, and proportions of ethnic communities. The one area of difference is that of age groups—the visually impaired population has a higher than average proportion of elderly people.

Therefore, just like sighted people, VIPs want to find study materials, works on hobbies and interests, use reference materials, and read for leisure. But they cannot do this in precisely the same way that a sighted person does. A sighted person using a catalog can scan long lists of results and visually move around a bibliographic record; they can also browse the shelves in physical collections and sample the text to get an idea of its content. In contrast, VIPs get catalog information in a linear fashion, are hindered by long lists they must remember, and have few collections they can visit physically; in addition, many accessible formats do not lend themselves to sampling the contents. So the catalog has to offer alternatives to the visually impaired user to replace approaches that sighted people can use.

Using Searches to Find Resources

A visually impaired user will try the same routes as a sighted user to find resources. Author/title searches are used for known items, and subject searching is used for particular topics. These searches then provide lists of records that match the search criteria. At this point, both users need to be shown sufficient information for them to evaluate the relevance of an item. But visually impaired users crucially also need to know the format. If the only version of a physics textbook is in standard print, just a few visually impaired people may be able to use some form of magnification (other than reading spectacles) to read it; most will need to use an accessible version. Interestingly, while this has always been the case for visually impaired people, it now applies increasingly to sighted users. If the only copy available of a work is in a format requiring a specific playback device, the user is unable to access the content unless they have (or have access to) that playback device.

Using Records to Identify Resources

Again, sighted and visually impaired users have the same task. They need the answers to one or more of the following questions: Is this the latest edition? Which is the “right” work of two items with identical titles but different authors? Is this the work with a commentary by a particular person? Is this work an abridged version? Once again visually impaired and sometimes also sighted people need to know the format. Identifying the work alone may not be enough.

Using Records to Select Resources

Both sighted and visually impaired users want to select the resource appropriate to their needs. All users will have occasions when they want to access particular content; they may want a score of a Mozart symphony...
and not a recording of the piece, or a map of a place and not a travel
guide. Once again, the visually impaired user will also need to know the
format: Is the music score available in Braille or talking score format? Is
the map a tactile map? And again, sighted people may need to know the
format.

At this point, users may need more information in order to select one
or more resources from a number retrieved. If the resource sought is
known (Pride and Prejudice by Jane Austen) author/title searching with for-
mat information displayed in the results list is enough. But where the user
has a less well-defined objective, more information is required. A keyword
search on “blind” may retrieve The Blind Watchmaker by Richard Dawkins;
this is not about a visually impaired craftsman but about evolution and
existence. And a title search on “mother nature” might retrieve both a
novel by Margaret Bacon and an academic text on evolution by Sarah
Blaffer Hrdy. The user will need to move into a fuller record, in which
subject indexing terms may assist the user to distinguish between items.
In some cases, however, records cataloged in a traditional fashion may
not provide enough information. For example, the user might read the
novel if it is a romance but not want a detective story; not all records will
contain this information. So additional information needs to be provided
in bibliographic records.

Using Records to Obtain Resources

All users need to know how to obtain an item. Visually impaired us-
ers do not usually visit collections of accessible materials; searches and
requests are handled through phone calls, mail, email, and the Internet,
and items are mailed to users. So users need to know contact details for
the holding organization. If it is a collection they have not previously
used, they will need to know if they are eligible to use the collection and
whether there are any charges. Where digital resources are concerned,
sighted and visually impaired users have the same needs. If a resource is
accessible over the Internet, then a URL is required, while in the case of a
digital file, access and eligible user information is needed.

Solving the Problems

Resource discovery is what the user wants to achieve, and find, identify,
select and obtain are the processes they use. For each process certain data
needs to be included in bibliographic records; catalog systems use the
data to provide access to the records. So what needs to be in bibliographic
records, and how do catalogs need to operate to support the visually im-
paired community?

Finding the answers for VIPs is not simply a quest for catalogs con-
fined to accessible resources. Users may wish to search “ordinary” catalogs
for certain materials (large print, audio, and, increasingly, electronic re-
sources), so the answers need implementing in all catalogs. And by implementing them in all catalogs, all users—whatever their level of sight—will be helped.

Does this require a lot of modification of bibliographic formats and systems? In the case of formats, probably not. Revealweb used the MARC 21 Bibliographic Format,\(^2\) and although some modification was required, it was not substantial. (Examples below refer to the MARC 21 Bibliographic Format; other formats may be equally hospitable to the information required.) In the case of library management systems and cataloging modules, more modification might be required. Online public access catalogs (OPACs) are not routinely designed to filter searches by format, even where the supporting data is included in the records. But such modifications are likely to be welcomed by users because they are increasingly encountered in commercial databases.

**Search Results**

Visually impaired people will be searching in the same ways as sighted people, and searches may return few or many items in results listings. Where a search query returns many items, this will be daunting to a sighted person but a real challenge for the visually impaired, forcing them to rely on remembering the early entries since quickly scanning the list is not an option. This is more likely to happen with subject searching, or with resources that have many versions, as in the case of works of popular and prolific authors. Catalogs can help users by implementing additional filters on searches and through the format used to display the results listings.

**Filtering** This is a useful way of reducing the number of results from a search. Where the target resource is a music score of a particular piece, it would help the user to be able to either request scores only or to exclude any sound recordings of the piece. In order for this to be possible, content and carrier information must be held in the record and used as parameters for filtering. Bibliographic record formats may already hold appropriate data that could be used to support filtering. For example, MARC 21 Bibliographic Format 007 Physical Description field coding, as well as GMD and SMD data in fields 245 and 300, could be used.

**Results Displays** Even with filtering, results displays may still be lengthy. Users will be helped by inclusion of content and carrier information in the citation type displays used in results listings. For example, Prokofiev’s musical composition “Romeo and Juliet” is available in many versions. Filtering can screen out the sound recordings, but the user may still require certain formats so it is useful if the display at this level can show whether an item is a standard print score, a large print score, a Braille music score, or a Talking Score. Again, MARC 21 Bibliographic Format has fields where
this data can be held; cataloging systems need to link this information with the style sheets or “fields to be shown” lists for results displays.

**Multi-Stage Searching**

If the user has a simple requirement (for example, any version of the text of *Emma* by Jane Austen), brief author/title details will be sufficient to identify matching works. Where the user requirement is for a specific version of the text (for example, *Emma* with a commentary by a particular expert), the user must access a fuller (but not necessarily the fullest) form of the record to identify the particular version needed. Once this primary selection has been made, the visually impaired user may also need details about formats. If the only accessible version of this text is Braille and the user is not a Braille reader, then there is effectively no accessible version available.

Since visually impaired users have information presented in a linear fashion and must remember earlier entries and information in order to backtrack in searching, it is useful if the catalog can be structured to assist them. Although the MARC formats are not currently designed to support FRBR specifically, there are ways of using MARC records in a more FRBR compliant way.

Using a combination of MARC 21 Bibliographic Format and Holdings Format can be useful. In the UK accessible versions of works are not allocated their own ISBN, so the ISBN of the original source text can be used as a collocation device. Revealweb has taken advantage of this. By creating a record for the source text in the Bibliographic Format and attaching to it a number of Holdings records, each for a specific transcription, a more hierarchical approach to searching can be constructed. The 007 Physical Description coding and publication details of the specific transcription are held in the Holdings record. This approach enables users to find the “right” text first, and then see whether there is a format they can use.

Thus, for *Harry Potter and the Chamber of Secrets* by J. K. Rowling three source texts have been used. The Bloomsbury hardback edition of 1999 was used to produce Braille grade 2 by both RNIB and the Scottish Braille Press and a giant print transcription by NLB; it was also the source text for National Blind Children’s Society (NBCS) digital transcriptions, which can be produced in various print sizes. The third source text is an audio recording by Cover2Cover in 2000, which has been used to produce a digital audio DAISY file.

It is not always possible to use ISBNs as not all works have them. For works without an ISBN, catalogs need to check the publication details of works so that they add holdings to the appropriate bibliographic record. This can be a problem with older texts because in the past transcription agencies kept few details about the source text, often only the date of publication. Because of copyright issues in the UK, transcribing agencies often made use of out of copyright editions as sources. So bibliographic
data for source texts of *Emma* by Jane Austen only indicate publication dates, for example, 1816 edition and 1900 edition.

There is a cautionary tale to this, however, as this situation may change since RNIB is considering allocating ISBNS to all its accessible format materials; if this were to happen, Revealweb would need to revise its cataloging guidelines. One option would be to put the accessible format–specific ISBN in the Holdings Format record field 020 ISBN; in order for this to still work in the way it does now, an ISBN search would have to search on field 020 in both the Bibliographic and Holdings Formats.

A potentially useful new tool here is the proposed International Standard Text Code (ISTC); this is a project of the International Standards Organisation (ISO) Working Group ISO/TC SC 9 Working Group 3 and would enable collocation of works at a higher level. A novel would have an ISTC, which would apply to all editions of that work. A translation of the novel would have a separate ISTC, as would a screenplay based on the novel. It is proposed that the three ISTCs could be linked as related works.

**Selection**

The precise nature of a user’s requirement will govern which information is needed to select the most appropriate resource. With regard to content it may be as little as author plus title, though edition and publication data may also be required; these are all standard data elements for bibliographic records. Subject indexing can also help selection for nonfiction works. But this may not be enough, and where possible other information about the content should be included in a record. A plot summary or abstract of content, table of contents, genre and form indexing, indications of reading age levels, or target audience can all be used to provide the user with information to aid selection while still consulting the catalog. A sighted person could access much of this information by handling the item; the visually impaired user usually cannot do this because they do not visit the collections and because accessible formats often do not offer the same ease of assessment.

**Trends in Leisure Reading**

In the past libraries relied on author and title entries in catalogs as the only access to fiction. But libraries are becoming more aware of how users choose recreational literature, and the catalog needs to provide additional ways to support users in their preferred methods of access.

**Fiction Series**

There is an increasing trend for fiction works to appear in series, either linked by a continuing plot (as in the Harry Potter series), theme (such as Discworld) or by one or more characters (often detective stories and crime thrillers or children’s series). Users reading one work from the series often
decide to go on to read all titles in the series, and they will therefore want information that identifies the series and the position of the work in hand within the sequence.

While it is accepted practice to include series details in records for academic works, it has been less usual to include this information for fiction. This is especially so because many of these series are not initially designated as series, or are only series by virtue of the fact that users refer to them as series (for example, the Barchester novels of Trollope). Fields are already available in MARC 21 Bibliographic Format for series information, so this information can be included. New options in Web-based catalog systems mean that series information can potentially be hypertext linked, allowing the user to find one title, establish where it is in the series, and follow links from the earliest title to the latest one held.

**Genre**

Public libraries have been aware for some time that many people have preferred genres of fiction. Users of collections have been assisted by shelving genre items in separate sequences—westerns, science fiction, love stories. However, the visually impaired user does not choose from the shelves (unless they are choosing large print or audio books from a public library) so the catalog needs to provide them with equivalent access. Genre information can be included in records in MARC 21 Bibliographic Format field 655 Form and Genre. A useful set of genre terms can be found in *The Guidelines for Subject Access to Individual Works of Fiction, Drama, Etc. (GSAFD)* (American Library Association, 2000), although it includes a few specialist terms from literature analysis (for example, Bildungsromans, Robinsonades, and Picaresque Novels), which may confuse users thinking more in terms of adventure stories and science fiction. Including this information would help a user viewing a record, and the data could also be used to filter searches for genre, which could be achieved by setting a filter parameter to this field.

**Creating Catalog Records**

So we know the problems for visually impaired users, and we know that there are solutions. But the solutions rely on having appropriate information in the bibliographic records. Visually impaired users benefit from full catalog records; this enables catalogs to offer filtered searching and display complete content, carrier information, and additional information appropriate to the resource in question.

Early computer catalogs were limited in capacity, leading to a trend for brief bibliographic records. With increases in system capacity, this is no longer a problem, and the trend now is for more and more content—tables of content, links to images, etc., in records. However, while records are capable of containing much information, few are constructed specifically with the visually impaired user in mind.
It is also important that this information is not limited to catalogs, such as Revealweb, that are specifically created for visually impaired people. Depending on their particular needs, visually impaired users may be able to use some materials held in public libraries: large print, audio books, and e-books and other digital resources. They therefore need adequate information in the catalogs of these collections. Interestingly, much of the additional information required by visually impaired people would also be appreciated by the sighted community. So let us look at what this additional information is and the situations in which it would be appropriate to include it.

**Added Entries**

Catalogers are used to including appropriate added entries for second and third authors, alternative titles, and uniform titles. This is all useful information for any user, so what more might a visually impaired person need? For study purposes, there are several situations that require extra information. Users may be referred to specific versions of a work, perhaps a novel with a substantial prefatory section setting the novel in context, an assessment of the work, and/or biographical details of the author. In this case an added entry for the editor or commentator is required. Or the user has been referred to specific section(s) of a work (the chapters by Jones, Black and Green, and Smith). Here there would be a case for added entries for all contributors or a table of contents.

**Summaries and Abstracts**

The basic details may not be sufficient to enable users to decide if a particular work is the one they want. The sighted user can pick up the book and read the blurb on the book cover; the visually impaired person (or the catalog user not at the shelves) relies on the catalog to do this.

Searching on “punctuation” might show two works: *Eats, Shoots and Leaves* by Lynne Truss and *The Complete Plain Words* by Sir Ernest Gowers. A summary or abstract can succinctly give the user an idea of the level and type of content. For example, contrast the following statement—“Lynne Truss argues that, with our system of punctuation patently endangered, it is time to look at our commas and semicolons and see them for the wonderful and necessary things they are”—with a summary for Gowers’s work: “This reference work will lead you through the intricacies of the English language with wit, common sense and authority. The book discusses the dangers of jargon, cliche and superfluous words, lays out the ground rules of grammar and punctuation and shows how to avoid the pitfalls, gives suggestions for drafting letters and provides a check-list of words to use with care.” The user gets a reasonable idea of the type of work in each case.

Summaries are also useful for fiction, allowing the user to sample the work without having to go to the shelves and dip into it. The following three examples all fall into the crime and detection category but are in dif-
fering styles: (1) “Sergeant Cribb finds himself immersed in the world of nineteenth-century pugilism, investigating illegal bare-knuckle boxing” (*The Detective Wore Silk Drawers* by Peter Lovesey); (2) “Villagers in Tilling Green receive anonymous letters and three deaths follow. The detective is an elderly lady who gathers clues as she sits knitting and listening” (*Poison in the Pen* by Patricia Wentworth); (3) “Cody is a freelance agent, recruited by the SIS, trained by the CIA, living and working in Paris. Hired to find those who killed the wife and kidnapped the recently adopted Romanian daughter of a Nîmes businessman, she runs into an old enemy; she is into something much larger than anticipated” (*Death and Co* by David Brierley).

**Target Audiences**

Because visually impaired people often cannot judge the level of a work by glancing through it, information about the intended audience and educational or reading levels is also important. A UK user would find it clear from the title that *Biology for Advanced Level* by Glenn and Susan Toole is a textbook for General Certificate of Education (GCE) A-level examinations; however, the work is also suitable for Scottish Certificate of Education (SCE) Higher examinations. *Living with Uncertainty* is a mathematics textbook, but the title indicates neither the subject nor the level; the user needs target audience information that the work is intended for mathematics National Curriculum Key Stage 4 and General Certificate of Secondary Education (GCSE) examinations. In MARC 21 Bibliographic Format this information can be entered in field 521 Target Audience.

**Missing Sections**

Where works have been transcribed into accessible formats such as Braille or audio, it may not be possible to transcribe the entire work, either because there is some nontextual information in the work (images or music notation examples) or because specific sections are omitted.

**Missing Images** Resources that include diagrams or illustrations may have tactile versions that are issued alongside the text, or the images may be available as a separate resource, or the images may simply not be available. Missing illustrations to a children’s novel will not hinder the user much, but a missing diagram in a textbook is another matter. So it is important to include in the records information about whether diagrams or images have been omitted. Where, for example, the diagrams are known to be available separately, enough information should be included for the user to search for that resource.

**Indexes and Tables of Content** Another type of incomplete accessible version arises from the fact that it is usually not possible to transcribe the index as it stands in the original work. The pagination will be different and the index would need to be recompiled; the cost of doing this usually prohibits
re-indexing. Transcription of chapter headings is possible, but page references to the chapters would again be difficult. The record should therefore contain information about the missing text.

**Partial Works**

This is not quite the same issue as that of missing sections. Because Braille works are very bulky, there is a tradition of creating the accessible versions of large works and collected works in separate sections. For example, individual books of the Bible are transcribed separately, as are collections of short stories. On occasion, individual journal articles are transcribed. Music notation transcriptions are typically issued in parts, even in standard print; thus, a song for four-part choir might have separate parts for sopranos, altos, tenors, and basses, perhaps with a piano part.

Another type of part work arises from the effort required to create accessible versions. In the past, if students required a text, but only certain chapters had to be studied, and it was not already available, they would request a transcription of specified chapters only. The transcribing agency might then retain a copy of the work for future use by others, but it would remain an incomplete transcription. Because new methods of transcription have reduced the effort required, agencies more often transcribe the whole item even when only part is requested, so this last type of part work is now less often produced.

**Identifying and Linking Partial Works**

It is important with both missing sections and partial work items that the user is informed that the item described is not complete in some way. Revealweb uses MARC 21 Bibliographic Format field 245 subfield b to hold “[part work]” at the end of whatever text is contained in that subfield. Subfields n and p identify the actual parts in the transcription.

It is also important to be able to link the different parts with one another. MARC 21 field 773 Host Item Entry can be used for the details of the journal issue in which an individual item appeared or the title of a collection of short stories. Using this field as a link (in systems that can support this) can enable the user to see if other articles in that journal or that collection were also transcribed.

**Series**

As has been noted above, users often need to know which items in a series are held and where a specific work fits in a series. Revealweb policy is to index all series, whether nonfiction or fiction (both numbered and unnumbered on publication). Thus, the Harry Potter novels, the Barchester novels of Trollope, and Terry Pratchett’s Discworld novels will all get a series entry, even though these are series in general usage rather than the publisher’s designation. In MARC 21 Bibliographic Format the use of fields 780 Preceding Entry and 785 Succeeding Entry show the user where an item fits with
other titles in the series and can also enable the user to move from the record for one title in the series to that for another, if the system supports this.

Genres

Many people read preferred genres of fiction. Public libraries and bookshops shelve some genres in separate sequences. The visually impaired person may browse the large print section in the library, but many are choosing reading matter at a distance. Genre indexing can be used to enable filtered searching. But there are also authors who write in more than one genre; including and displaying genre information in records can help the user by identifying one work as a thriller and another as a romance or a historical novel.

Subject Indexing

Series information for fiction can help a user find all titles featuring a character when the character’s name is part of the (constructed) series title, for example, the Poirot mysteries of Agatha Christie. But there are occasions when a character appears in a number of works that have a more tenuous relationship. And there are always the users who remember the character name but not the title of a work. In these cases it can be helpful to make subject entries for the character. MARC 21 Bibliographic Format field 650 can hold entries such as “Holmes, Sherlock (fictitious character)” or “Hardy Boys (fictitious characters).”

Content Warnings

Accessible formats such as audio recordings have one potential embarrassment factor. These may be played on equipment that broadcasts to the room and not through headphones to a single person. In this situation, it may be that the visually impaired person would wish to know in advance that the work had certain characteristics. For example, they might not wish to listen to a work containing a lot of violence and swear words when young children could also hear the recording.

Often users are aware of problematic content, as when choosing a work that is known to them. But when choosing an unknown title from a catalog, they require some indication of potentially difficult content. A convention has arisen in the UK visual impairment sector, therefore, whereby audio and video works are occasionally given a content warning. This is a factual statement of the content and is intended only to give the user choice in selection of an item and information relevant to playback decisions they might make.

Carrier Information

For visually impaired people the specific accessible format is often crucial to whether they can use the resource. Someone who does not read Braille at all does not need to know more than that an item is in Braille. But the Braille reader needs to know more; someone who can only read
grade 1 will struggle with a grade 2 or 3 text, which includes special characters for contractions of words. The need to distinguish between versions is even more crucial with Braille music, as there are a number of ways in which the content is laid out (Tucker, 1999). Knowing the specific carrier form is also important when equipment is required; the user who has a CD player but not an audio cassette player needs to know the carrier of audio books.

The MARC 21 Bibliographic Format provides for much of this information to be held in coded form in the 007 Physical Description fields, in addition to including some information in fields such as 300 Physical Description, 306 Playing Time, and 340 Physical Medium. This information can also be held in Holdings Format records. The Geac Advance system used by Revealweb allows specific 007 coding combinations to be used to generate text strings that appear in a record. Since the 007 coding was not sufficient for Revealweb requirements, this has been extended in some areas to enable text strings to be generated for a range of carriers, including DAISY files, talking scores, and audio-described videos. Text strings generated include “audio cassette two track,” “Braille grade 2,” “video with audio description,” “digital audio DAISY 2.02,” “giant print,” and “print various sizes.”

**DISPLAY ISSUES**

Much of this article has necessarily concentrated on the information that needs to be held in a catalog record. However, the user sees the displays that are constructed from the record. They may be able to see the full record presented in format field order, but there are other views that can be presented. Therefore, displays need to be designed to help the end user. A search will produce a list of records that appear to match the search query: a citation display. From the citation display, the user either is taken straight to the full record or in some cases is offered the choice of brief or full records to view. At each stage it is important to identify the appropriate information to be displayed and then decide how to present it. For example, format fields may have new labels for public display. MARC 21 Bibliographic Format field 100 is Main Entry—Personal Name, but OPACs typically display the information held in the field under the label Author.

**Citation Displays**

Citation displays need to be brief but have sufficient information to enable the user to quickly determine whether to pursue that item or reject it. Author and title are typically the only fields given, but users need more. An indication of the type of content will enable them to distinguish between the book and the film of *Pride and Prejudice*. At this point, visually impaired users are likely to also want information on the carrier type. A statement such as “Austen, Jane. *Pride and Prejudice*. [text : large print]” provides users with information enabling them to choose or reject items.
**Brief Record Displays**

From the results display list, users may be offered the choice of brief or full records. Brief records contain more information than citation records but less than full records. Content and carrier information and summaries should be included in brief records to assist visually impaired people.

**Full Record Displays**

In one sense this is the simplest form of display as all information in the record is shown. However, displays of full records do not necessarily need to display fields in bibliographic format order; it is useful to consider user requirements here. For example, the carrier type information needs to be toward the top of the record. A further display type of the full record in (MARC 21) format display could be offered when another version of a full record is created.

**Catalog Accessibility and Navigation**

This article has concentrated on the information held in catalog records and how it can be used to assist visually impaired people. Another side of catalog accessibility is that of how the user interacts with and navigates the system—support for keystroke combinations instead of mouse clicks, hierarchical structuring with choices at each level limited to avoid lengthy lists, provision of suitable alternative text for images and icons, etc. This is outside the scope of the present work but has been treated by other authors (for example, Brazier & Jennings, 1999; Brophy & Craven, 1999; Palfrey, 2005). It is an important factor, and systems designers should ensure that OPACS are designed according to relevant accessibility standards.

**Conclusion**

Catalogs are vital tools for resource discovery for visually impaired people. While catalogs restricted to accessible materials are valuable, the importance of catalogs of general collections should not be underestimated; visually impaired people increasingly use them for certain materials.

The quality of catalog records is important. Techniques such as filtering and hypertext linking between records requires appropriate data to be held. But simply adding the data is not enough; libraries need to work with system suppliers to ensure that these techniques are routinely built into library catalogs.

Additional data such as summaries, genre indexing, and target audience information are important because they provide equivalents to activities used by sighted people, such as shelf browsing and sample reading of items. It will, of course, take more time to create a fuller record, but the library community has a long history of re-use of records; twenty or thirty libraries do not necessarily all have to extend a record. And it does not all have to be done at once. It is not an impossible task, but policies and practice do need to be reviewed and changed. And this is a win-win
situation. Improving catalogs for use by visually impaired people has the added benefit of improved catalog quality for sighted users as well. So, what are you waiting for?

NOTES
1. See http://www.revealweb.org.uk/
2. See http://www.loc.gov/marc/
4. The example summaries in the above paragraphs were taken from either Revealweb records or entries on the Amazon UK Web site.

REFERENCES

Ann Chapman is part of the Policy and Advice Team at UKOLN and her work focuses primarily on collection description and bibliographic management metadata. Her research interests cover the quality, standards, and format of bibliographic records for all types of materials in both current and retrospective cataloging, as well as performance measurement for bibliographic databases. She has worked on the UK national retrospective conversion strategy “Full Disclosure” and the Revealweb union database of accessible formats. She is a member of the BIC Bibliographic Standards Technical Sub-group (whose role includes UK responses to proposed changes in MARC 21), the CILIP/BL Committee on AACR, and the Revealweb Policy Advisory Group.
The DAISY Standard: Entering the Global Virtual Library

ELSEBETH TANK AND CARSTEN FREDERIKSEN

ABSTRACT
The emergence of the modern information society and the rapid development of Information and Communications Technology (ICT) has spurred libraries serving visually impaired people to cooperate globally in order to manage the transition from analog to digital services. The formation of the DAISY Consortium in 1996 led to the concept and fundamental ideas of the digital talking book. The result is an international standard for digital talking books, which is now becoming a multimedia standard. DAISY has developed new partnerships, new working methods, and new ways of thinking. The digital vision has improved library services to print-impaired people and changed the participating libraries themselves. Today some DAISY libraries are close to becoming fully digitized, and DAISY technology is heading into mainstream use. Users may soon be entering a global virtual library, and the DAISY experience may in many aspects serve as a model for future library developments.

INTRODUCTION
Imagine entering a library without a single physical lending item on the shelves, without books in print, actually without shelves, just large cooled servers, whirring digital archives linked through digital networks with machines for copying and distribution. No whispering, no shushing. It is not science fiction or the librarian’s nightmare. It is actually a dream come true.

The DAISY Consortium¹ was formed in 1996 to take advantage of new digital opportunities. For more than a decade now, modern society has been defined as an “information society”—a society in which both low-cost
information and Information and Communications Technology (ICT) is in general use. Today it is more often defined as a “knowledge society” to stress the fact that the most valuable asset is investment in intangible human and social capital and that the key societal factors are knowledge and creativity.2

Knowledge has become the most important capital in the present age, and the success of any society lies in harnessing that capital. Not just economics, but also social, cultural, and all other human activities are dependent on a huge volume of knowledge and information. Modern society is characterized by the ability to identify, interpret, produce, process, transform, disseminate, and use information; to make informed choices; and to share information and knowledge through effective networking mechanisms.

The ability to take part in these processes has become an even more crucial precondition to participate in social life. Being able to use, read, and understand communications is not only a precondition to participate in social life; it is also a key to quality of life for the individual. Not being able to read or write at the same level as everybody else is a serious disadvantage in the knowledge society.

Information and knowledge have always been vital components in the formation of society. Every society is formed around some shared concepts, but one of the contributions of globalization and new ICT is the creation of a global society with a shared knowledge of issues and possibilities. With present day technologies, knowledge societies need not be constrained by geographic location because technology offers many more possibilities for sharing, archiving, and retrieving knowledge.

In general such a society presents great opportunities: it can offer new employment possibilities, more fulfilling jobs, new tools for education and training, easier access to public services, and also increased inclusion of disadvantaged regions or people. It also presents new challenges, however; the transformation of existing social structures and of global economies to knowledge economies does not guarantee economic growth with “equity” either within or between nations as knowledge becomes a much-valued resource to be possessed and harnessed for its economic benefits.

At a very early point in the development of the DAISY concept talking book readers from many countries were consulted regarding their reading requirements and their vision of a fully accessible audio book. Their comments made it clear that analogue recordings did not adequately meet their reading and information needs. Poor access to points within the book, awkwardness of the medium itself, poor sound quality, and other daily annoyances indicated that producers of talking books had to begin the move to a digital platform.

People having trouble with reading and writing face problems in modern daily life, where manuals for household tools, informative labelling,
and letters from authorities are commonplace. It is possible, but definitely not easy, to manage a life with very little reading, but there is a risk of social exclusion as access to print or virtual text is an essential key to almost any form of training and education.

Libraries providing services to people with print disabilities have recognized the challenges and opportunities created by the knowledge society and are acting to make a difference in this changing environment. Digitization has spurred the formation of the DAISY Consortium, a global initiative to manage the transition from analogue to digital library services to visually impaired people. Digital formats provide new possibilities to counter the risks of social exclusion of print disabled people and promote equality in access to information and knowledge.

The conversion to digital services may benefit large numbers of people. Globally, in 2002 more than 161 million people were visually impaired, of whom 124 million people had low vision and 37 million were blind. These global estimates produced by the World Health Organisation (WHO) are considered the best scientific estimates of the global burden of visual impairment (WHO, 2004). However, the actual global magnitude of visual impairment is greater. Worldwide, for each blind person an average of 3.4 people have low vision, with country and regional variation ranging from 2.4 to 5.5. Visual impairment is not distributed uniformly throughout the world. More than 90 percent of the world’s visually impaired people live in developing countries.

In the knowledge society, the much broader concept of print disability may actually even be more relevant than visual impairment. The definition of print disability can vary from country to country, but generally print disability may be defined as the inability to access information in a print format due to either a visual, perceptual, or physical disability. Examples may include blindness, dyslexia, learning disabilities, or the inability to hold a book, follow a line of print, or focus and concentrate.

Everyone must have open and timely access to information and knowledge to ensure equality, social inclusion, and a society where all forms of knowledge get recognized and valued, and to provide everyone with the opportunity to a higher quality of life. Social inclusion is fundamental in all democratic societies; everyone should have the same rights and opportunities to participate in cultural, economic, and community life. Societies must recognize situations in which certain groups are put at a disadvantage and make a commitment to eliminate inequality and discrimination by facilitating the process of removing barriers. Nobody should be excluded for reasons of aptitudes or disabilities.

This obligation, confirmed in and defined by the right of access to information in the United Nations International Covenant on Civil and Political Rights, Part III, Article 19(2), is as important as ever: “Everyone shall have the right to freedom of expression; this right shall include free-
dom to seek, receive and impart information and ideas of all kinds, regard-
less of frontiers, either orally, in writing or in print, in the form of art, or
through any other media of his choice” (United Nations High Commiss-
ioner for Human Rights, 1966). The exercise of this basic human right
can be severely hampered by the inability to use conventional print due
to a visual, learning, or neuromotor disability. People with disabilities that
prevent them from reading print have long been deprived of access to the
same information as the rest of the population.

The invention of the printing press increased the availability of written
materials for the majority of people, but it also served to create new
barriers to information for print impaired people, who found themselves
excluded from the world of print information. The invention of braille and
other tactile reading systems partially helped those who were blind, but its
expense and bulk limited its usefulness. In the twentieth century radio and
recordings have helped narrow the gulf, but the information highways and
the computer have truly created the possibility of a new world of access to
information.

For the last decade publishing has been undergoing a revolution. Web-
Based publishing, electronic publishing, and multimedia presentations
have all contributed to a new and different understanding of the term
“to publish.” When information is digitized and managed by computers,
it can be manipulated in many ways. Visually impaired readers can use
software that enlarges the display on the monitor to permit them to read
it. Speech synthesizers can speak the material on the screen for the reader
who is blind. Other input devices permit people with motor impairments
to operate a computer and to move through the text without having to
hold a book or turn pages. Voice recognition systems can operate a com-
puter. Many new options are available to people with visual or motor dis-
abilities.

At the same time, different communication devices are merging; com-
puter, phone, radio, stereo, and television are becoming one multipur-
pose device or, rather, many kinds of new devices. Digital technologies are
also changing the systems for disseminating information. Stores, libraries,
and postal delivery still play an important role when people are acquiring
or searching for information, but the complex global network of phone
lines, cables, and satellite transmitters—the information highway—has
become a major mechanism to bring the user and the electronic text to-
gether.

The DAISY Consortium

Ten years of high-speed technological development have passed since
the formation of the DAISY Consortium. Advancing technologies and
supporting standards are now making it possible to meet fundamental
human needs in the information or knowledge society—needs that could
not be accommodated in the analog environment. On the threshold of the digital age, libraries serving visually impaired people recognized both this opportunity and the fact that the task was too burdensome and too complex to be managed individually. New ways of thinking and working had to be applied.

The first steps toward the worldwide transition from analog to digital talking books were taken in Sweden in 1988, when the Swedish Library of Talking Books and Braille (TPB) initiated a project to develop a digital talking book. In 1991 TPB saw the need to adapt to new digital technologies. This talking book software was built on the DAISY concept (Digital Audio-based Information System), which specified the demands that needed to be met to create a functional, high-quality digital talking book. The core of the concept is the phrase-based storage of audio. Additional requirements for the system were

- ability to skim the text, phrase by phrase or section by section, where each section is a collection of phrases;
- ability to search for different elements in the text-based table of contents;
- ability to search for specific pages in the talking book;
- ability to place and search for bookmarks in the book; and in a future version,
- ability to “underline” and make notes in the talking book.

The first prototype of the Swedish DAISY Playback for Windows was presented in 1994 at the International Conference on Computers Helping People with Special Needs (ICCHP) Conference in Vienna. At the same time, worldwide interest in creating a new common format for talking books was growing, and it was generally acknowledged that the nature of this task called for international cooperation. In 1995 various institutions interested in new digital techniques met in Toronto, and the Japanese company Shinano Kenshi/Plextor presented their vision of a DAISY-specific digital talking book player.

Based on close professional relations developed through many years of cooperation within the Libraries for the Blind Section of the International Federation of Library Associations (IFLA) a number of national talking book libraries and organizations decided to form an international consortium for the promotion of a new digital talking book standard based on the DAISY concept. The DAISY Consortium was formally founded in May 1996 in Stockholm to establish a de facto standard for digital talking books for print impaired people and for commercial audio books. The concept of the DAISY digital talking book (DTB) became reality.

Initially, the international DAISY Consortium included member organizations from Japan, Spain, Great Britain, Switzerland, Holland, and Sweden. Since then the Consortium has been constituted as a not-for-profit
association under Swiss law. Today this targeted international cooperation has managed to pool the relatively limited resources and expertise available within a niche area and to create the critical mass essential to success. The Consortium has literally become a large cross-sectoral partnership that consists of Full Members, Associate Members, and Friends. A board of twelve members and several highly qualified staff members around the world take care of daily business.

During recent years membership of the DAISY Consortium has grown at a rapid rate; currently, close to 40 countries are represented within the Consortium. There are 12 Full Members, some 45 Associate Members, and around 60 Friends. It is estimated that hundreds of thousands of unique DAISY books have been produced by participating Consortium member organizations. Full and Associate Members of the DAISY Consortium are nonprofit organizations, typically national talking book libraries or national consortia of such libraries, while profit-making organizations are associated as Friends.

It is the vision of the DAISY Consortium that all published information be available to people with print disabilities at the same time as printed versions, and at no greater cost, and in an accessible, feature-rich, and navigable format. The DAISY Consortium’s mission is to develop the international standard and implementation strategies for the production, exchange, and use of DTBs in both developed and developing countries, with special attention to integration with mainstream technology, and to ensure access to information for people with print disabilities.

To guide its efforts the DAISY Consortium has identified five major goals, which are

• to create and promote the worldwide standard for the navigation and structure of digital talking books;
• to encourage and foster the establishment and development of digital talking book library services in both developed and developing countries;
• to maximize the accessibility and utility of electronic books and multimedia documents for people with print disabilities;
• to secure the recognition and adoption of the DAISY standard for navigable multimedia documents among mainstream product developers and book publishers; and
• to encourage and foster the establishment and development of a global talking book library that transcends geographic boundaries and linguistic differences and that embraces cultural diversity.

The DAISY Consortium makes a special effort to strengthen access to information for visually impaired people in developing countries, being those countries housing the vast majority of visually impaired people in the world. DAISY for All (DFA) is a project that deploys DAISY technol-
ogy and focuses on capacity building of groups in developing countries and on generating broader alliances that will support the global sharing of human knowledge in the information society.

The DFA objective is to encourage production and dissemination of DTBs and to provide information in an accessible format to visually impaired people in developing countries in their local languages. This is done through creation of content and by developing playback and talking book authoring tools in local languages. DAISY for All is primarily funded by the Nippon Foundation and has activities in Bangladesh, India, Malaysia, Nepal, Sri Lanka, and Thailand, among other places. Further activities are planned in Latin America and Africa.

THE DAISY STANDARD AND TECHNOLOGY

Today the DAISY standard is widely recognized as the ideal approach to providing navigable and accessible information to people with print disabilities. A standard is, by definition, a specification of requirements that has been approved by a recognized standard-making body (de jure) or accepted for convenience as a standard by an industry (de facto). Standards exist in all fields of technology: for programming languages, operating systems, data formats, communications protocols, and electrical interfaces. The acronym DAISY is often used to refer to a standard for producing accessible and navigable multimedia documents. In current practice, these documents are digital talking books, digital textbooks, or a combination of synchronized audio and text books.

The DAISY standard is widely accepted as a de facto standard, but the initial and continuing aim of the DAISY standard is to become a fully international de jure standard, and to that end, the DAISY Consortium is planning to move this standard toward adoption by the International Standards Organization (ISO). There was a major breakthrough in progress toward this goal in April 2005, when the DAISY standard was approved as a national standard by the formal standard-setting bodies recognized in the United States, the American National Standards Institute (ANSI), and the National Information Standards Organization (NISO). The American National Standard defines the format and content of the electronic file set that comprises a DTB and establishes a limited set of requirements for DTB playback devices.

The American DAISY standard is based on several recommendations of the World Wide Web Consortium (W3C). To ensure development at the lowest possible cost, DAISY technology is, to the widest possible extent, based on well-known and approved technical standards. There is no point in reinventing what has already been invented. This has made it possible for the fairly small niche area of library services to visually impaired people to keep pace with mainstream technological development.

The recommendations of the W3C currently include Extensible Mark-
up Language (XML) and Synchronized Multimedia Integration Language (SMIL). Both of these are internationally recognized standards accepted in the technology industry. The versions in use may vary, depending upon the available technology and other factors. Hardware and software in use today implement the DAISY 2.02 standard; however, over the coming years product and service providers will be making the transition to comply with specifications as outlined in DAISY 3, the ANSI/NISO Z39.86 2002 standard.

In 2003 the DAISY standard was used in the United States to establish a national digital file format for instructional materials for students with disabilities, namely the National File Format (NFF). This was a significant endorsement of the DAISY standard, as it may serve as an inspiration for other countries working to establish an accessible national file format. Since the beginning of the 1990s many different bills were passed in the United States to ensure the provision of digital files to facilitate braille production. One of the major difficulties has been the lack of a standard file specification that publishers can use to deliver the files. Hundreds of different file formats were noted in the various pieces of legislation, and none were fully specified. The need for a common national file format was widely recognized, and in 2003, the DAISY 3 (ANSI/NISO Z39.86-2002) XML DTD (Dtbook) was selected as the format to use. In 2004 this standard was adopted as the National Instructional Materials Accessibility Standard (NIMAS) and incorporated into a new Individuals with Disabilities Education Improvement (IDEA) Act.

The DAISY Consortium is constantly working to improve DAISY technologies. Typical consortium projects are based on partnerships between two or more organizations, institutions, or companies situated in various locations around the globe. This working method builds on mutual trust and shared dedication and can be both risky and hard to manage, but it is the only way forward, necessitated by the complexity of the matters involved and the relatively limited resources of the individual Consortium members.

The Urakawa Joint Project is an example. The Consortium has identified a global need for better ways to create high-quality multimedia authoring software, and a project was launched aiming to advance worldwide open, nonproprietary standards for multimedia that are fully accessible to people with disabilities. The DAISY Consortium, the French National Institute for Research in Computer Science and Control (INRIA), the Centre for Mathematics and Computer Science (CWI) in the Netherlands, and National Rehabilitation Centre for Persons with Disabilities (NRCD) in Japan, have engaged in the development of a multimedia authoring software framework that includes an object-oriented abstract data model, an Application Programming Interface (API), a code library, and at least one sample application.
The Urakawa project will create a software development framework that can be used by anybody to build multimedia authoring applications. The product will be open source, royalty free, and available under licensing terms that will encourage commercial and noncommercial companies to build on the API and code library. Synchronized Multimedia Integration Language (SMIL) and the DAISY/NISO Standard are the main specifications identified within the application domain.

THE DAISY DIGITAL TALKING BOOK

The actual DAISY product—the DAISY book or the digital talking book—is, in short, a multimedia representation of a print publication. For many years talking books have been made available to print disabled readers on analog media, first on phonograph records and then on audiocassettes. These media serve their users well in providing human speech recordings of a wide array of print material in increasingly robust and cost-effective formats. However, analog media are limited in several respects when compared to a print book. By their nature they are linear presentations, which leave much to be desired when reading reference works, textbooks, magazines, and other materials that are often accessed randomly.

The era of library services offering talking books on tape is marked by limited and delayed supply, cumbersome working procedures, and troublesome products; talking books on tape are quite usable but not adequate and somewhat drab in the eyes of the user. DAISY DTBs meet talking book readers’ requirements by providing access to the talking book in a way that has never before been possible with a human voice production of a print book. It offers the print-disabled user a significantly enhanced reading experience much closer to that of the sighted reader using a print book.

DTB users are able to navigate through a DAISY book by moving between the headings, chapters, and pages. Depending upon how the book is produced, images with descriptions may be included, along with even more detailed navigation. Reading devices for these materials enable users to place bookmarks for later reference.

The DTB goes beyond the limits imposed on analog audio books because it can include not just the audio rendition of the work but the full textual content and images as well. Because the textual content file is synchronized with the audio file, a DTB offers multiple sensory inputs to readers, a great benefit, for example, to learning disabled readers. Talking book users have long complained that they do not have access to the spelling of the words they hear; now users can listen to a book while reviewing the print book if they wish.

Books consisting of navigable audio files may be accessed with a portable player or via computer. Such books with a significant portion of text offer a user the choice of closely examining the text using a computer equipped with synthetic speech, a braille display, or via screen-enlarging
software. Digital talking books are not tied to a single distribution medium. CD-ROMs will be used at first and most often, but DTBs will be portable to any digital distribution medium capable of handling the large files associated with digital audio recordings and can even be transmitted through the Internet.

Even people who do not have a print disability may benefit from reading books that use the DAISY standard. Books that take advantage of the DAISY standard offer an eyes-free reading experience without sacrificing the ability to skim and note passages of particular interest. DAISY books that include an electronic version of the text can also be searched with ease. These reading experiences can be equal to or better than the experiences of those offered by reading traditional books or by conventional commercial e-books.

The DTB, like analog talking books, renders the audio in human or synthetic voice; it has been summarized by Thomas Kjellberg Christensen and Margit Dühring (2006) as a set of digital files that includes

- one or more audio files containing a human narration of part or all of the source text;
- a marked-up file containing some or all of the text (strictly speaking, this marked-up file is optional);
- a synchronization file to relate markings in the text file with time points in the audio file; and
- a navigation control file that enables the user to move smoothly between files while synchronization between the text and audio is maintained.

Additionally, the DTB can contain image files, and a forthcoming version will also include a video playback capability, as the standard is to become a multimedia product offering a wide range of features in order to provide services to a broader audience, including, for example, deaf and hearing impaired people. The audio file must be either in WAVE, MPEG-1, or MPEG-2 Layer III (often denoted MP3) or MPEG-4 AAC format. The text of a book is marked up in Extensible Mark-up Language (XML), a World Wide Web Consortium (W3C) standard somewhat reminiscent of HTML, the language used for Web pages. For use in digital talking books, the XML mark-up must adhere to a specific Document Type Definition (DTD) defining the “legal” building blocks of the XML file. The DTD for a DTB is publicly available through the DAISY Web pages.

The synchronization is mediated by Synchronised Multimedia Integration Language (SMIL) files, which ensure the parallel presentation of the text part and the audio part of a DTB. The SMIL files for DTBs follow a DTD of their own. SMIL is a W3C standard.

The Navigation Control Center (NCC) consists of a Navigation Control File for XML Applications (NCX) file, which is an XML application structured in accordance to a separate DTD. The NCX contains navigation
points for both text and audio and can be likened to a table of contents. Each navigation point in the NCX is linked through a SMIL file to the corresponding location in the audio and XML textual content files, providing direct access to that location. The NCX controls the global navigation and provides access primarily to relatively large parts of the document. The NCX provides an overview of all the points in a text to which a user may navigate and offers direct access to selected structures in the book such as page numbers, notes, and figures. Once an NCX item has been selected, local navigation—such as movement within a list or table, or among a group of words, sentences, or paragraphs—becomes possible.

DAISY DTBs are not required to contain all of the possible constituents mentioned above. The different combinations of elements have given rise to six types of DAISY DTBs. Of the six types, four offer improved access and human voice delivery through links between the digital audio sound files and the marked-up text files. It is these links that give the talking book reader access to the structure of the book; these links are the key to a DAISY DTB.

As defined in the DAISY structure guidelines, the six categories of DAISY types of DTB are the following:

1. Full audio with title element only
   This is a DTB without navigable structure. Only the title of the DTB is available as text, and the content is presented as linear audio only. Direct access to points within the DTB is not possible.

2. Full audio with Navigation Center (NCC or NCX) only
   This is a DTB with structure. The structure is two-dimensional, providing both sequential and hierarchical navigation. In many cases, the structure in this type of Daisy DTB resembles the table of contents of its print source. Some of these productions provide page navigation.

3. Full audio with Navigation Center and partial text
   This is a DTB with structure as described above, as well as some additional text. The additional text components may occur where keyword searching and direct access to the text would be beneficial, for example, for the index or glossary. The audio and existing text components are synchronized.

4. Full audio and full text
   This is a DTB with structure and complete text and audio. The audio and full text is synchronized. This type of production may be used to generate braille.

5. Full text and some audio
   This is a DTB with structure, complete text, and limited audio. This type of DTB could be used for a dictionary where only pronunciations are provided in audio form. As in the previous categories, the audio and text are linked.
6. Text and no audio

This is a DTB containing a Navigation Center and marked-up/structured electronic text only. No audio is present. This file may be used for the production of braille.

DTBs produced to the DAISY standard are in and of themselves independent of distribution medium, that is, the digital master file can be archived and may also be distributed on currently available media such as CDs or DVDs. More importantly, as technology advances and digital media distribution methods evolve, these same books can be distributed via the newly developed media or system. The types containing text may also include images.

There are currently three ways of listening to a DAISY DTB, either through a special DTB hardware player or through special software on a computer or with an MP3 or DVD player. With the two latter players it is not possible to use the full structure of the DTB, but the user can listen to the DTB and have a very simple way to linearly jump forward or backward in the book between navigation points. This could be, for example, jumping from paragraph to paragraph, but it could just as well be from a chapter to a page to a paragraph as these players do not differentiate between the different kinds of navigation points. Additionally, to use these two players the audio files in the DTB should be stored in the right order, which is not always the case.

In the process of the DAISY Consortium’s work with developing both the standard and the production tools for DTBs, developers of players have been involved from the very start. This means that today there is a range of vendors on the market offering accessible players. Of the various types of players on the market, some are very simple and function very much like ordinary old-fashioned cassette players and offer a limited possibility of navigating the structure of the book. Other players are very sophisticated and enable the user to fully utilize the structure and the navigation features of the DTB, such as the ability to move to a specific page or paragraph and to insert bookmarks. Some software players display the text on the screen, for example, in large print, while the text is read aloud.

A Case Study: The Danish National Library for the Blind

Digital talking books provide steps into the future, and as analog technology is phased out libraries are obliged to change. The Danish National Library for the Blind (DBB) set out to complete a full transition from analog to digital DAISY technology before the end of 2008. At present, DBB offers print-impaired users a selection of 12,000 digital audio book titles, 1,200 e-books, and a couple of e-newspapers. In the years to come, more
digital content will be at the heart of DBB’s approach, and the strategy to succeed is the formation of partnerships with libraries, library portals, and other providers of information.

The goal is to move forward as quickly as possible with the implementation of truly digital processes, which implies, among other things, higher speed—and lower costs—in production and improved individual user service. DAISY technology provides better books with high sound quality, numerous facilities for users, and lower production costs per unit. In principle, users can choose between talking books, e-books, and braille books without a significant cost increase in the process of production.

As it moves into a new life with DAISY, DBB has introduced the key concept of the digital mindset, which focuses on the ability to understand and make maximum use of the potential of technology. The library is striving to be constantly aware of setting off from a digital starting point and at the same time unlearning all those ways of thinking, conventions, and traditions tied to analog technology, which are losing relevance as it is phased out. All aspects of library operations must be reinvented in a new digital context.

Today the consequences of the digital revolution within DBB are obvious in the production process, with computers ready to produce copies on demand day and night, and in the range of opportunities provided by digital formats. Less conspicuous is the gradual transformation taking place in the minds of library employees: the transformation into the digital mindset and the learning process necessary to enjoy fully the benefits offered by digitization in terms of resources and convenience.

The essence of the digital mindset is accepting that the complexity of the digital environment is here to stay but also that complexity does not equal chaos. The digital world may seem chaotic, uncertain, ambiguous, and even paradoxical, but the many new options offered by technology are also stimulating and challenging to human creativity and mental capacity. The implementation of a digital mindset is not meant to reduce the range of options or complexity, but it is, rather, a way to prioritize the continuing process of training and development that enables all members of the organization to think and act within the logic of a digital world. It is a constant reminder of the need for digital innovation.

The DBB virtual Internet library is an example of digital mindset adopted in practice. Today the online portal of the DBB—named E17—is an integrated part of the everyday library service. Users can search the library collections and order the materials available by e-mail or directly download e-books in different formats. They can interact through virtual bulletin boards and recommend books to each other. The virtual library is equipped with comprehensive navigation facilities especially designed for DBB’s user groups. The contents on E17 can be read aloud in synthetic speech through the program WebReader, which was developed by DBB.
Another example of the digital mindset is the abolition of a key activity in conventional, and even modern, libraries, namely, library lending practice. Digital materials are now produced and distributed on demand and may be kept by the user. This new practice is based on new exceptions in Danish copyright legislation, which have been endorsed by DBB and relevant partners. The next step will be to download DAISY DTBs as well as e-books. The result of digital on-demand distribution is a reduction in the cost of transportation of materials. Furthermore, the library no longer needs resources to receive, handle, and return materials to the shelves.

In return for granting permission to use and keep their materials, publishers have demanded a renewed guarantee that digital material is not distributed through unauthorized sources. This request is met by allocating all library users an ID number, which is integrated in the digital materials as part of the process of production on demand. Materials delivered on CD are also marked with the postal address of the receiver. Should materials from the library be unlawfully distributed, the ID number can be used to identify the source of the abuse.

In 2006 materials containing sound will also have digital watermarks installed, which can identify the user who received the material. Methods of encrypting materials specifically for individual users are being developed. Both watermarks and encryption to a specific user can be added to the material. The development of a Digital Rights Management (DRM) standard and tools is being conducted under the auspices of the Daisy Consortium.

DBB’s transition from analog to digital technology is being made step-by-step. This approach has proven to have advantages and disadvantages. It has been an indisputable advantage that new products and forms of distribution have been developed in an iterative process, for example, tests involving limited groups of users have been carried out in various pre-projects. Consequently, both users and DBB have gained a solid and relevant experience, which endows the ongoing transition with a convenient overview and a sense of confidence.

However, the costs of running double lines of production for several years have been significant. DBB plans to enroll 3,500 more digital users in 2006 and the remainder in 2007. By the end of 2009, expectations are that there will be 15,000 individual digital users compared with 10,000 today. It is most likely and highly desirable that DAISY DTBs and new digital services will attract more print-disabled library users.

The Future of DAISY

The DAISY experience is quite exceptional within the global library community. It has developed new partnerships, new working methods, and new ways of thinking. It is an extraordinary example of targeted global cooperation, not just among libraries but among commercial partners as well as universities and other groups of experts. It may be seen as a stepping stone...
for libraries entering the digital future and as a means of exploring core library issues, such as management of digital media, handling of copyright, and exchange of global content. The DAISY Consortium has successfully influenced market developments to the benefit of library users.

In some DAISY members’ countries the efforts of the international Consortium are now supported by national DAISY organizations working to promote the DAISY vision and mission. DAISY members in Germany, Japan, Sweden, and Switzerland have established such organizations, whose members are often regional public libraries, university and research libraries, organizations, government authorities, and magazines offering, or interested in, services to visually impaired people. In the United Kingdom a special DAISY fundraising unit has been created, and in the United States plans are to establish a similar national fund for DAISY.

The expansion and consolidation of the DAISY Consortium and DAISY technology has created a platform for the management and safeguarding of copyright, an important issue that can only be handled with an international perspective. Most entities distributing books for blind and print disabled people using the existing DTB standards are required by law to apply some sort of protection, up to and including stringent encryption and watermarking systems.

Copyright is not just a legal matter nor only about trade politics: it is an issue involving common social interests such as democratic rights and educational and cultural policies. The battle of business in the digital environment is still intensifying. The rules regulating traffic on the digital highways and the rights of those travelling there are still politically debated.

The fair balance of copyright, between the protection of creative works and access to information and knowledge, is delicate. In any case, the copyright holders and publishers whose works are being distributed wish to see those works protected in a way that prevents their dissemination to unauthorized users. At the same time, end users of those works expect reasonable rights to the use of those publications. The requirement is a minimally invasive system that balances equitably the rights of end users with the protection requirements of copyright holders, publishers, and local copyright law.

The development of DAISY technology has been necessary to give groups with information deficits the full benefit of the new potential of digital technology. The citizens of the learning society need DAISY technology, not least those with information deficits. In Denmark and other countries, DAISY technology is now widely used by people with dyslexia. They can listen to a book while reviewing the printed text on screen if they wish, which is a great help in spelling the words they hear. Today some of these people with dyslexia even regard the computer as their equivalent to the glasses of the weak-sighted.

Pending copyright developments, an even larger number of people may
make use of the technologies and services designed for visually impaired people. Even in the wealthy Western societies with the highest levels of education, the number of functional illiterate people—defined as individuals who are unable to use reading, writing, and computational skills in everyday life to, for example, fill out a job application, read traffic signs, read a newspaper, or understand a school bus schedule—is estimated to be an average of up to 10 percent of the population. These people are not visually impaired, physically handicapped, or dyslexic but rather have problems reading because they have not maintained their acquired reading skills and do not read on a daily basis.

Digital innovation is changing the world and markedly affecting the library universe. It is transforming the traditional concepts of libraries themselves, of printed books, and even of basic text and writing: libraries without printed books, nonprint books without fixed and permanent text, and interactive hypertext combined with sound and images. Well-known forms and shapes have become less clear and more ambiguous. The virtual library is no longer a figment of the imagination.

The accelerating rate of change and an increasingly unpredictable and complex world challenge the old patterns and require lifelong learning and innovative capacity. The concept of the “learning society” emerged around 1970 along with that of the knowledge society. The term refers to a new kind of society in which the traditional transfer of organized knowledge, inside educational institutions and immediately after initial training, no longer applies. Learning is a never-ending process of communication and knowledge—and the ability of individuals to adapt to change is a key factor.

Digitization is no longer a mere buzzword; it has become hard reality, including in the library world. To fully exploit technologies and to maximize their impact, suppliers, distributors and users, and library managers and employees now have to acquire a new and more comprehensive “digital mindset”: thinking digitally and being flexible and innovative. The knowledge society has revealed a new and different reality, displaying a broad range of perspectives for future library development. The digital reality is no longer just a question of e-business or e-service; it is also e-production.

This digital mindset has been a pivotal aspect of all DAISY activities. In the near future, libraries will be able to offer users with disabilities digital products of far better quality and with unique user functionality. Efficiency in service, measured in terms of timeliness as well as costs, will reach an attractive level. And in several ways, the digital library service to citizens with disabilities could indeed prove to be a pilot project for the transformation that is closing in on all parts of the global library community. The general concept of a library may be subject to changes never experienced in the past. The concept of the hybrid library is debated today, but soon users will be entering the virtual library.

DAISY technology can provide users with information directly from
the producer to the mailbox at home. The traditional ways of cooperation between libraries serving people with print disabilities and public library services, which have been functioning in some countries, are changing already. The chain of supply has to be rethought, but the DAISY Consortium still needs close interaction with other libraries and their organizations to remain an integrated part of the global library community and to ensure mainstream solutions.

Initially, the DAISY standard was established and developed to benefit people who are unable to read print due to a disability, but over the years it has also proven to have broad applications for improved access to text for mainstream users. DAISY aims to become part of the mainstream market. Publishers, newsrooms, libraries, educational institutions, and others who need to communicate or disseminate complex volumes of text in user-friendly ways will be able to profit from DAISY technology. The DAISY Consortium encourages commercial suppliers to equip the market with the necessary hardware and software players because even though MP3 players and modern DVDs can be used, full advantage of the user facilities are still only provided by dedicated players. DAISY is reaching out to the commercial sector, and this sector has recognized shared interests.

At a seminar on “Libraries for the Blind and Print Disabled Moving Toward a Digital Future” hosted by then Microsoft Accessible Technology Group (ATG), the ICT icon Bill Gates, Microsoft chairman and chief software architect, said “We ought to be able to connect mainstream issues with special needs, to create a bridge between the two” (Microsoft, 2004). He stressed that “The advantages of accessing different types of digital information on a variety of devices are not limited to the visually impaired. The pioneering work being done to serve their special needs today could have widespread benefits for every user tomorrow—and keeping the two closely connected will help lower costs and speed development (Microsoft, 2004). The DAISY technology will undoubtedly be the cornerstone in the development of the global library for people with special needs, and the technology experience harvested by DAISY membership can prove to be of benefit to other types of libraries. Some special libraries for visually impaired people in the wealthy Western societies will probably be the first fully digitized libraries in the world. They have entered the digital age with open eyes and minds.

Notes
1. For further information see http://www.daisy.org/.
2. The UNESCO World Report Towards Knowledge Societies has been used as a basic starting point for this article. It is available at http://unesdoc.unesco.org/images/0014/001418/141843e.pdf.
3. For further information see http://www.daisy-for-all.org/.
4. For further information see http://urakawa.sourceforge.net/.
References


Carsten Frederiksen is International Executive Assistant in the DAISY Consortium and a freelance journalist and publishing editor. He has been Deputy Director of Free Access to Information and Freedom of Expression (FAIFE), the International Federation of Library Associations and Institutions (IFLA) initiative to promote intellectual freedom in all aspects related to libraries. Frederiksen has worked as a library consultant for the United Nations Mission in Kosovo (UNMIK). He was head of the joint Kosovo Libraries Mission of UNESCO, Council of Europe, and IFLA assessing the situation of libraries in Kosovo after the war in 1999 and co-author of the report Libraries in Kosovo/Kosovo: A general Assessment and a Short and Medium-Term Development Plan. He is a former International Secretary of both the Danish Library Association and the Danish Union of Librarians.

Elsebeth Tank is the Director of the Danish National Library for the Blind, the President of the DAISY Consortium, and member of the Standing Committee of the IFLA Libraries for the Blind Section. Previously Tank was Director of the Department of Culture and Leisure Activities and City Librarian in the municipality of Koege. Tank has also served as President of the Union of Librarians in Denmark. In that capacity she was one of the founding mothers of the European Bureau of Library, Information and Documentation Associations (EBLIDA).
Web Accessibility

PETER BROPHY AND JENNY CRAVEN

ABSTRACT
The increasing provision of Web-based information resources has moved from a simple text interface to dynamic and interactive designs. While this move has provided people with a more creative and flexible experience, there are dangers that some people will be excluded because they cannot use standard methods of access. Research has shown that people with disabilities are most at risk of being excluded from access, and in particular people who are blind or visually impaired and who use assistive technologies such as screen readers. In a library environment, ensuring access for all is important because the method of delivery is predominantly Web-based and the development of e-book provision will provide increased opportunities to access library services remotely. This article reviews some key issues relating to Web accessibility, identifying methods of access, principles of accessibility and usability, and how Web accessibility can be assessed. Studies show that despite a growing awareness of Web accessibility issues, people are still experiencing barriers to access. Research initiatives identified in this article, and the development of the W3C WAI WCAG version 2.0, show that the research momentum is being maintained, and together with specific library-oriented research this can only be positive for the development of the profession’s practice in this area.

INTRODUCTION
The accessibility of Web-based information can be improved in two principal ways: through the use of access technology and through adopting good practice in interface design. Both are of equal importance: provision of assistive equipment (adaptive, enabling, or access technology)
will enable a visually impaired user to access on-screen information receiving output in a way that is appropriate to their needs. However, in addition to this, the information provided on screen must be presented in a way that can be interpreted by any kind of access technology. This is what is referred to as “accessible Web design,” “design for all,” or “universal design.” The need for a universal approach has been driven by the increasing complexity of the design and delivery of Web-based information, moving from a predominantly text-based interface to a dynamic, multimedia interface offering visual, audio, and interactive ways to access and use the information provided.

“Design for all” in a library environment basically means that library information technology (IT) systems and interfaces must be designed in a way that enables them to be read and interacted with easily by all users of the library, whether they physically are visiting the library itself or accessing it remotely and regardless of any disability or access preference they may have. The Royal National Institute of the Blind (RNIB) describes “design for all” in relation to Web sites as “a single version of the Web site which is accessible to everyone” and that “well designed graphics and multimedia are a positive aid to using and understanding websites, and do not need to be sacrificed for accessibility” (RNIB, 2005). This is a general shift away from the provision of parallel “accessible” Web sites, such as the provision of a text-only version, to the provision of a single version that is fully accessible.

A number of factors have contributed to the case for Web accessibility. These have been outlined by the World Wide Web Consortium (W3C) as a “Business Case for Web Accessibility” (Henry, 2005) and include the following headings:

- Social factors
- Technical factors
- Financial factors
- Legal and policy factors

Considering the points above further, the social case for Web accessibility lies in the belief that everyone has a right to access, not just people who can afford the technology or who access it via standard equipment and browsers. As well as helping people with disabilities to gain access to electronic information, it is generally accepted that good design for accessibility is good design for everyone. This is becoming even more apparent since people are accessing the Web in so many different ways, such as via a mobile phone, PDA, or a Palmtop computer. However, there are particular groups who will benefit even more from accessible design, including

- people who are blind (either totally blind or with no useful sight) who need to use screen reading technology or refreshable Braille to access the Web;
• people with a visual impairment who need to use screen magnification or screen enlargements/adjustments;
• people with a learning difficulty such as dyslexia who need to adjust the screen or text or who use screen reading aids;
• people who have a hearing impairment and need to have any audio or sound captioned or described in text; and
• people who have a physical impairment that does not allow them to use a mouse, or who need to use assistive technologies such as joysticks, switches, or speech input to access the Web.

Of the above groups, the people who would most benefit from good Web design are generally people who are blind, partially sighted, or dyslexic, and in particular those who use screen reading technology (DRC, 2004).

From a technical point of view, Web accessibility is important to ensure interoperability between different applications and to enable users to access the Web using their preferred format. This could be via assistive technology to interact directly with the site or to download information into an alternative format.

Financial motives for ensuring Web accessibility will be varied, as organizations have different reasons for establishing a Web presence. It may be to disseminate information about the organization, promote the services it delivers, provide links to related information, or for buying and/or selling goods and services. Being seen as supporting accessibility is also important to business image.

Current and impending legislation (both in the UK and other countries) relating to the provision of services to disabled people has forced many organizations to reconsider their strategies and policies for service provision (see Cabinet Office, 2005; Oppenheim & Selby, 1999; Ormes, 2001). In the UK the Disability Discrimination Act (DDA) (1995) requires (under Part III of the act) providers of “goods, facilities and services,” such as libraries, to provide an equal level of services to all of their customers. It also states that no extra charges can be imposed for service provision in relation to a person’s disability, for example, charging a fee to produce materials in alternative formats (DRC, 2002). Part 4 of the DDA, the Special Educational Needs and Disability Act (2001), covers services already covered by Part 3 of the DDA but now affects all education and training providing by higher education, including its libraries. This requires UK universities to provide access to assistive technologies such as Braille readers and speech output and “that material placed on the Web is accessible” (Doyle & Robson, 2002, p. 52). The legislation also states that no extra charges can be imposed for service provision in relation to a person’s disability, for example, the provision of works in large print or Braille. The Disability Discrimination Bill (Great Britain, 2004) contains
a new public sector duty to promote equality, such as the procurement of goods that meet accessibility standards.

In the United States Section 508 of the U.S. Rehabilitation Act requires federal government Web sites to be made accessible to people with disabilities. This law is based on W3C Priority 1 checkpoints. The act also prohibits federal agencies from buying, developing, maintaining, or using electronic and information technology that is inaccessible to people with disabilities.

Although there is currently no pan-European legislation relating to Web accessibility, the member states of the EU are required to adhere to the eEurope Action Plan (European Commission, 2002) designed to increase use of the Internet in all areas of European society. The Action Plan recommends the adoption of the Web Accessibility Initiative (WAI) guidelines and the development of a European Design for All curriculum, thereby strengthening assistive technology and design for all standardization. Recommendations are also made relating to the procurement of accessible public information and communication technologies, along the same lines as the Section 508 legislation in the United States, which requires the procurement of electronic and information technologies that are accessible to people with disabilities.

Since 2002 the European Commission has disseminated a Communication on e-Accessibility, which aims to move forward the recommendations of the Action Plan and to achieve “an ‘Information Society for All’, promoting an inclusive digital society that provides opportunities for all and minimises the risk of exclusion” (European Commission, 2005). The measures recommended by the commission include Design for All methods in the design of products and services, including the design and evaluation of Web sites and drawing on recommendations made by the W3C/WAI. At present e-Accessibility is implemented on a voluntary basis, but if sufficient progress has not been made by the planned review of progress, then legislative action may have to be considered.

**The Digital Library**

While there is no universally accepted definition of a digital library, it is useful to think of it as a series of interrelated services built on digital information content. The key user-related processes have been variously defined, perhaps most commonly as resource discovery, location, request, and delivery. In order for resources to be discovered and used they must be described (that is, metadata created) and organized. Services are then built on this organized content. In order for the effort expended to be worthwhile, these services must be used, and for that to take place there must be some kind of user interface. As Arms has put it, “a digital library is only as good as its interface” (2000, p. 160).
The interface of choice for nearly all digital library services is the World Wide Web. Although significant changes are taking place in Web technologies, the graphical user interface (GUI) has rapidly become dominant and looks likely to remain so. From an accessibility perspective this has at least allowed standard approaches to be developed to try to ensure that all users are able to access all services. The library Web site will provide information about opening times, services offered, and contact details. It may also offer access to the catalog, online journals, abstracts, and contents pages, as well as providing online access to borrower details and renewal and reservation services. The provision of full-text journal articles and the development of e-book provision will provide increased opportunities to access library services remotely. This will be further enhanced by the continued implementation of copyright legislation that allows alternative formats designed for people with visual or other impairments to be produced from digital files.

It is often difficult to differentiate meaningfully between the “library” and other information services in the electronic landscape. Indeed, there is considerable evidence that at least some groups of users tend to try to resolve their information needs first by use of general search engines and only move on to library services when that source fails (see, for example, some of the results of the Centre for Research in Library and Information Management [CERLIM] project EDNER, available at http://www.cerlim.ac.uk/edner/welcome.html). It is unlikely, however, that they would distinguish any one set of services as a “library.” Increasingly, portals are being developed to provide an access point to a range of such services, and it is now perhaps more meaningful to speak of the digital library as encompassing a wide range of services accessed through a portal, which may be “internally” or “externally” provided and mediated.

Whatever the focus, ensuring access to as many people as possible makes good business sense as well as being ethically and legally sound. To quote Arms again, “digital libraries are of little value unless they are easy to use effectively” (2000, p. 143). This is particularly true for users with a visual impairment, who in the past have all too often been treated as a side issue in designing the user interface. If “design for all” principles are fully implemented across all library IT systems, including their Web sites, all users will be provided with an equitable level of access to information and services.

**Assistive/Adaptive Technologies**

Technology can provide the means for a blind or partially sighted person to overcome barriers such as the need to read print, use a computer, take notes and communicate both on paper and electronically. Video magnifiers and electronic readers, Optical Character Recognition software,
magnification software, speech output systems and electronic Braille devices all have a part to play in a solution for a particular individual.

These computer-related aids and equipment are commonly known as “assistive,” “adaptive,” “access,” or “enabling” technology. Often people will use a combination of the above technologies to enable them to read electronic print. For example, they may use speech output predominantly, with Braille output to verify unusual spellings or language. Magnification may be used to explore a page, with speech output to read out more text-rich parts of the page.

Research and development into the provision of computer-related aids have been driven by a belief in universal access for all. Projects include TIDE ACCESS, which focused on the “design for all” concept (Stephanidis & Emiliani, 1998), and the SPEECH project (Zajicek & Powell, 1997), which built a conceptual model of the Web for visually impaired users through development of the BrookesTalk Web browser. BrookesTalk aimed to present the contents of Web pages for anyone using speech-only technology. Other examples include the development work undertaken by the Trace Center (O’Briant, 1999) in the United States and the continued work on standards and guidelines relating to all areas of the Web undertaken by the W3C Web Accessibility Initiative.

Despite the excellent work that continues in the development and provision of assistive technologies, the success of these technologies lies also in the design of Web sites. Unless accessibility is built into the design of a site, even the most up-to-date assistive technologies will still be unable to access it. It should also be noted that different types of assistive technologies present different problems to accessing a Web site. Observations in the Non-visual Access to the Digital Library project (NoVA) (Craven & Brophy, 2003, p. 118) revealed problems specific to assistive technologies, such as pixelated text when using magnification and screen readers not reading out every link on a page because of poor layout.

Another issue identified as influencing the success of assistive technologies is user training. JAWS, for example, is a powerful screen reader that provides the user with many options in terms of Web site navigation. It is an extremely complex (and expensive) piece of technology that requires initial training in its use if its potential is to be realized and may also require further training whenever a new version is released. Observations made during the NoVA project confirmed that success in using some of the more advanced features provided by screen reading technology was often dependent on awareness, training, and experience (Craven & Brophy, 2003, p. 118).

In a public access setting, such as a library, it is also essential that staff are fully trained in the use of assistive technologies provided on the open access computers. Staff must feel confident in providing assistance as
well as be aware of the particular difficulties faced by visually impaired people.

**Design of Accessible Web Interfaces**

In the literature Web accessibility generally refers to the application of technical solutions to the design of a Web site in order to render it more accessible to users, in particular users of assistive technologies. Technical solutions refer to the correct application of properly validated coding such as Hypertext Mark-up Language (HTML) or Extensible Hypertext Mark-up Language (XHTML), which define the structure of the content, together with the use of cascading style sheets (CSS), which define the way the content is displayed. A wide range of articles, books, and reports can be found on the subject of Web accessibility (see for example Brophy & Craven, 2000; Nielsen, 2000; Paciello, 2000; Thatcher et al., 2002; Waters, 1997), but probably the most influential work relating to the design of accessible Web interfaces has been that of the World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI). WAI provides a comprehensive set of guidelines and checkpoints to help ensure Web sites embrace the concept of “design for all.” These are available in a number of categories covering guidelines for the accessibility of Authoring Tools (ATAG), User Agents (UAAG), and probably the most well-known, the Web Content Accessibility Guidelines, or WCAG.

The WCAG Checkpoints (W3C, 1999) are divided into a number of priority and conformance levels to help people to assess the accessibility of their Web sites:

- **Priority 1**: A Web content developer must satisfy this checkpoint, otherwise, one or more groups will find it impossible to access information in the document. Satisfying this checkpoint is a basic requirement for some groups to be able to use Web documents.
- **Priority 2**: A Web content developer should satisfy this checkpoint, otherwise, one or more groups will find it difficult to access information in the document. Satisfying this checkpoint will remove significant barriers to accessing Web documents.
- **Priority 3**: A Web content developer may address this checkpoint, otherwise, one or more groups will find it somewhat difficult to access information in the document. Satisfying this checkpoint will improve access to Web documents.

Priority levels are further defined by a level of conformance (W3C, 1999):

- “A”: all Priority 1 checkpoints are satisfied
- “A-A”: all Priority 1 and 2 checkpoints are satisfied
- “A-A-A”: all Priority 1, 2, and 3 checkpoints are satisfied
The WAI also suggests the following ten “Quick Tips” (W3C, 2001), which should cover the main issues needed to ensure a Web page is accessible:

- Images and animations—use the “ALT” attribute to describe the function of each visual
- Image maps—use client-side image maps and text for hotspots
- Multimedia—provide captioning and transcripts of audio and descriptions of video
- Hypertext links—use text that makes sense when read out of context. For example avoid “click here”
- Page organisation—use headings, lists and consistent structure. Use CSS for layout and style where possible
- Graphs and charts—summarise or use the “longdesc” attribute
- Scripts, applets and plug-ins—provide alternative content in case active features are inaccessible or unsupported
- Frames—use <noframes> and meaningful titles
- Tables—make line-by-line reading sensible. Summarise
- Check your work, validate—use tools, checklists and guidelines at: http://www.w3.org/WAI/Resources

A fully comprehensive list of the checkpoints provided in the WCAG version 1.0, which the WAI recommend, are used in conjunction with the two other guidelines produced by the W3C/WAI. These are guidelines on the accessibility of authoring tools (Authoring Tools Accessibility Guidelines, ATAG) and guidelines on the accessibility of user agents, such as Web browsers (User Agent Accessibility Guidelines, UAAG).

Most organizations concentrate on the WCAG; many have also produced their own accessibility guidelines based on the WCAG recommendations, but they are often written in less technical terms or focus on issues specific to the organization. For example, Urban (2002) considers the successful implementation of accessibility into different enterprises, such as large organizations, educational institutions, or government entities. In the UK the Cabinet Office e-Government Unit’s Guidelines for government Web sites (http://www.cabinetoffice.gov.uk/e-government/resources/handbook/introduction.asp) state that all UK government Web sites should, as a minimum, adhere to both Priority 1 and 2 levels of the WCAG (version 1.0), in other words be A-A compliant.

Currently WCAG version 1.0 is still the working document that should be referred to. However, WCAG version 2.0 is still in production, and the last Working Draft was issued in April 2006. A final call for review was also issued, with comments requested by June 2006. Following an extensive review process, a final working draft is promised in “early 2007.” Until WCAG 2.0 becomes a W3C Recommendation, WCAG 1.0 will continue to be the working document to use.

WCAG 2.0 covers issues relating to Web accessibility, and, where they
have an impact on accessibility, usability issues will be addressed. Four principles of Web accessibility are proposed in the current draft document (W3C, 2005):

- Content must be perceivable to each user
- User interface components in the content must be operable by each user
- Content and controls must be understandable to each user
- Content must be robust enough to work with current and future technologies

The W3C and WAI provide an important framework for ensuring accessible Web design, development, and assessment. This has been the focus of an EU Web Accessibility Benchmarking (WAB) cluster of three EU-funded projects working in liaison with the W3C/WAI to develop a harmonized European methodology for evaluation and benchmarking of Web sites: the Unified Web Accessibility Methodology, or UWEM (see http://www.wabcluster.org/). The Cluster Projects are looking at three specific areas:

- The European Internet Accessibility Observatory (EIAO)—preparation of a platform for a possible observatory (measurement machine with modular tests, site inventory for jurisdictions, results management and aggregation)
- SupportEAM—investigation of a possible Web accessibility quality mark (proposal of a certification mechanism and authority, national help desks, training material etc.)
- BenToWeb—production of test suites for evaluation tools and evaluation modules for checkpoints difficult to automatize. Research into integration of testing modules in CMS and issues related to dynamic multiversion Web pages

By coordinating aspects of the work described above, the three projects will work together to develop an EU-harmonized assessment methodology for Web accessibility, based on W3C/WAI and to be synchronized with the move from WCAG 1.0 to WCAG 2.0. The UWEM will be developed iteratively involving evaluations with potential users of the methodology (for example, Web site developers and accessibility experts) and users of Web sites (including people with a range of disabilities) to cross-validate the checklist.

As well as involving users in the development of the UWEM, the methodology itself will include a section on User Testing Protocols. This emphasizes to anyone considering or preparing to undertake Web accessibility assessment that, whether using the WCAG guidelines or other approaches to assess the accessibility and usability of Web sites and Web-based services, it is important to involve users and take into consideration their requirements for an accessible Web.
Although widely used, the WCAG have often been criticized for being difficult to implement and even difficult to understand (although it is hoped that WCAG 2.0 will address this issue). In a formal investigation of Web accessibility in the UK, the Disability Rights Commission (DRC) tested 1,000 Web sites using a software tool, then compared results of detailed evaluations by 50 users with a variety of impairments (DRC, 2004). The study evaluated user attempts to perform set tasks with an assessment criteria of ease of use and success of outcome. Users also participated in focus groups and interviews to explore accessibility and usability issues further. A controlled study of six Web sites was also undertaken by a group of blind users and nondisabled users to assess the difference between the effects of inaccessible design and of the impairment. Focus group discussions concentrated on how people use the Web, what they find useful, the variety of problems they encounter in accessing Web sites, and the problems associated with the assistive technology they use. The study identified 585 accessibility and usability problems. The most reported problems relating to the WCAG checkpoints were as follows (DRC, 2004):

- Checkpoint 1.1: Provide a text equivalent for every non-text element
- Checkpoint 2.2: Ensure foreground and background colour combinations provide sufficient colour contrast, etc.
- Checkpoint 6.3: Ensure pages are usable when scripts, etc. are turned off, and if this is not possible provide an alternative
- Checkpoint 7.3: Until user agents allow users to freeze moving content, avoid movement in pages
- Checkpoint 10.1: Until user agents allow users to turn off spawned windows, do not cause pop ups without informing the user.
- Checkpoint 12.3: Divide large blocks of information into more manageable groups where natural and appropriate
- Checkpoint 13.1: Clearly identify the target of each link
- Checkpoint 14.1: Use the clearest and simplest language appropriate for a site’s content

As a result of these findings the DRC recommended the WCAG should “provide better coverage of information architecture and navigation design issues in relation to accessibility,” addressing in particular elements relating to the problems identified above (DRC, 2004, pp. 47–48).

With this in mind, some individuals and organizations have decided to take a more holistic approach to Web accessibility rather than relying on existing guidelines and recommendations. One example described by Kelly, Phipps, and Swift (2004) outlines broad issues for consideration such as “the purpose of the Web site, interoperability, cultural and resource issues” as well as usability and accessibility issues. The focus is to take a more pragmatic approach to accessibility rather than trying to achieve the “holy grail” of W3C AAA compliance. Kelly, Phipps, and Howell (2005) recog-
nize that this approach has limitations when compared with the W3C WAI guidelines but argue that “a checklist approach can, in fact, be counterproductive as it encourages developers to prioritise the objective areas which testing tools can easily report on.”

**Web Usability**

Web usability generally refers to the experience the user has when reading and interacting with a Web site, whether using assistive technology or a standard computer set up. Conflicts can exist between accessibility and usability because, in practice, the former tends to be technology led and the latter user led. In the Web environment, studies into usability have identified content organization and navigation paths as the most important factors to aid the information seeking of visually impaired people. Other factors could include link effectiveness and differentiation and destination prediction (Goble, Harper, & Stevens, 2000). The Towel project (Goble et al., 2000) took a novel approach by identifying a number of issues relating to travel and mobility that a visually impaired person will need to address in order to achieve their travel task. For example, they need to have advance knowledge of any obstacles on the route (in other words, a preview of what is ahead). The project mapped this “real life” experience of travel into the virtual environment to help demonstrate how Web developers should be thinking about the design of the interface to enhance the visually impaired user’s experience. Craven (2003) explored the concept of mapping the visually impaired user experience onto established models for information-seeking behavior to take usability issues a step further by focusing on a user-led rather than system-led approach to Web design, thus helping to improve the information-seeking experience of visually impaired people in Web-based environments.

The perceptions and experiences of Web use by blind and visually impaired users have been explored in a number of surveys and studies (Berry, 1999; Brophy & Craven, 1999; Coyne & Nielsen, 2001; Craven & Brophy, 2003; Craven & Snaprud, 2005; Kelly, Phipps, & Howell, 2005; Lewis, 2004; Nielsen, 2002; Pilling, Barrett, & Floyd, 2004). Sadly, it seems that although progress has been made toward a more accessible Web, many of the problems cited in 1999 are still in evidence six years later.

Blind and visually impaired users experiences with Web use were summarized by Berry (1999) in a literature review on issues of visual impairment. The paper describes a study undertaken with a group of blind and partially sighted students and staff to ascertain their experiences in accessing and using the Web. Those with total sight loss or those with partial sight who were inexperienced Web users were identified as experiencing severe problems due to poor Web design. They were more likely to become frustrated and switch off the computer. Feedback from a sample of visually impaired users who explored a selection of Web sites for the Resources
for Visually Impaired Users of the Electronic Library (REVIEL) project (Brophy & Craven, 1999), undertaken by CERLIM, identified problems using Web sites using screen reading technologies. These included repetitive text, inappropriate ALT tags and link descriptions, and problems filling out forms. It is interesting that the problems highlighted in this study, undertaken in 1998, are still being cited by users as accessibility problems in 2005 (see Craven & Snaprud, 2005).

A study conducted by the Nielsen Norman group also found that blind and visually impaired people experienced usability problems navigating the Web, estimating that “the Web is about three times easier to use for sighted users than it is for users who are blind or who have low vision” (Coyne & Nielsen, 2001, p. 5). The findings of the Nielsen Norman group concurred with results from usability tests undertaken for the NoVA project (Craven & Brophy, 2003), which also identified users of screen reading assistive technologies to be the most severely affected by badly designed Web pages. The NoVA project also provided an insight to the types of problems faced by all users. The focus of the project was on the information-seeking behavior of blind and visually impaired people, but the control group of sighted users also highlighted usability problems, thus reinforcing the importance of involving all types of users in any design and development project.

The study showed that although the design of accessible Web sites is improving, all types of user can be faced with navigational problems. Some problems experienced are due to accessibility and usability conflicts, such as inappropriate or unhelpful use of alternative text or poor use of language. Other problems are due to a lack of understanding of the different ways users interact with and navigate Web-based resources. In many cases Web designers have clearly placed more emphasis on promotion of a particular product or service than on usability or accessibility and appear to be unaware of, or to be ignoring, the results of accessibility and usability research.

A survey of blind and visually impaired people using electronic information services in public libraries (Lewis, 2004) found that adherence to accessibility guidelines will not necessarily ensure services are usable for blind and visually impaired people. As a simple example, the WCAG mandate an “ALT” (alternative) text for all images and other nontextual elements, but while the presence or absence of text can be checked automatically, what cannot be checked in this way is the meaning of the text supplied. And, as Kelly, Phipps, & Howell, (2005) have pointed out, “technical accessibility does not equate to intellectual accessibility . . . an ALT tag merely names, not explains an image.” A need for feedback from real users is essential alongside automated testing of Web sites to ensure guidelines are valid and relevant. Lack of familiarity with electronic equipment and a lack of support and training in its use was also identified as a barrier to accessibility.
These issues were explored further in a study of disabled people and the Internet (Pilling, Barrett, & Floyd, 2004). Of the 196 respondents, 20 percent were either registered blind, had a severe visual disability and other disability, or other visual impairment. The study revealed the users would like Web sites to have the following:

- Guides on the home page informing people about the site’s contents
- Less cluttered pages
- Fewer graphics and advertising
- Links to be clearer and fewer
- Print size and colours to be easily changeable
- Greater standardisation
- Search to be more clearly marked and more precise

People using assistive technologies described the problems they experienced accessing the Internet. For example, screen magnification “looks a bit fuzzy when it’s blown up” (Pilling, Barrett, & Floyd, 2004, p. 30). Problems with screen readers were described, as well as not being able to afford the more up-to-date technologies such as JAWS (Pilling, Barrett, & Floyd, 2004, p. 32). Lack of support and training in the use of assistive technologies were identified as additional barriers to access.

Barriers can also arise because many disabled people cannot afford, or are not motivated, to upgrade their assistive software to the latest version. This issue has often been neglected, with designers making unwarranted assumptions as to what will be available to the user. Thus, a considerable amount of effort expended on checking whether current versions of popular products “work” (in accessibility terms) has ignored the issue that real users may be accessing current Web pages with old software. Pilling’s report of 2004 reveals that little has changed since the Craven and Brophy study (2003), and a more recent study (Craven & Snaprud, 2005) shows that, again, the same problems are being experienced by disabled users.

The European Internet Accessibility Observatory Project (EIAO) conducted user requirements and usability studies to inform the technical development of its Web accessibility assessment and data-gathering tool (Craven & Snaprud, 2005). A survey on user requirements for an accessible Web site involved end users and included a range of disabilities, although blind and visually impaired users were predominant in responding. Analysis of the survey data showed that keyboard access (shortcut keys, tab navigation, and/or keyboard navigation) was the most frequently cited accessibility problem experienced by the respondents. This is a particular problem for someone who needs to use keystrokes to navigate a page that has been designed to be navigated using a mouse. For example, they may be forced to listen to the whole page being read rather than be-
ing able to tab logically to a relevant link, or through the main headings on the page. Problems either with lack of ALT text or poor use of ALT text were also cited. An example of inappropriate ALT text described by one of the participants was a customer services telephone number displayed as a graphic with the ALT text as “Customer Services telephone number.” This clearly demonstrates that a lack of awareness of the purpose of ALT text still exists.

Respondents also cited problems relating to the organization of the page, leading to an inability to navigate the site. They described how some Web sites and Web pages had been organized in a way that was not logical to navigate using tab keys or that had been designed with too many layers, which made it difficult for them to find the information they were looking for. Single pages that were overly long were also mentioned as a problem for some users because they had to keep scrolling down the page and possibly up again, making it a time-consuming process. For someone using screen reading technology, poor use of titles for Web pages prevents them from quickly establishing which page they are looking at (the screen reader can read out the title first). An example of poor use of titles is each page of a site simply giving the name of the company, thus not helping visitors to quickly establish which part of the site they are in.

Problems using FLASH, JAVA Script, and PDF were also cited by users, particularly those using screen reading technologies. Access to these proprietary formats have recently generated a great deal of discussion among Web developers and designers and accessibility experts. Whereas work has been undertaken to help make these formats more accessible for people using assistive technologies (Gavin, 2005; Nielsen, 2002), the EIAO study showed that end users still perceive them as inaccessible. One argument is that although these formats are much more accessible, many people are either not aware of this or are not prepared to try and use them because of a bad experience in the past. Another argument is that although these formats are “technically” accessible, they are not necessarily usable yet and may also require the use of the most up-to-date versions (both the format itself and the assistive technology) to render them accessible.

Assessment of Web Accessibility

Assessment of accessibility can be undertaken using a variety of methods. Automatic accessibility evaluation tools are a popular way of assessing the accessibility of Web sites because they can be performed quickly and are often free of charge. Cynthia Says (http://www.cynthiasays.com/) and WAVE (http://www.webaim.org/wave/index.jsp) are examples of free online checking services (a comprehensive list of tools is available at http://www.w3.org/WAI/ER/existingtools.html). But this is only part of the process: the results from automated testing can often be misinterpreted and will not provide the whole picture in terms of accessibility. A
mixture of methods is therefore recommended, such as those suggested by the W3C (n.d.) in the Evaluating Websites for Accessibility section. These could include

- semi-automatic and automatic testing using validation tools (to check that valid mark-up has been used) and accessibility checking tools (to check that accessible mark-up has been used);
- manual evaluation using relevant criteria for assessment such as the Web Content Accessibility Guidelines checkpoints and priority levels; and
- user testing of specific features of a Web site; this should include people with a mixture of disabilities, different technical abilities, and users of assistive technologies.

A study of the accessibility of 134 UK higher education library Web sites, conducted for the Resources for Visually Impaired Users of the Digital Library project (Brophy & Craven, 1999), identified a number of examples of good practice, with 49 of the 134 home pages evaluated being eligible for the Bobby Approved Icon. However, the study acknowledged that using an automated checker such as Bobby (now WebXact: http://www.watchfire.com) has its limitations, citing examples of accessibility problems identified manually that were not identified by Bobby.

Since this study was undertaken awareness of the limitations of automated checking has increased considerably; however, it should be noted that the accessibility problems identified by the study were similar to more recent studies, which have used a mixture of automated, expert, and user testing (see City University, 2004). Problems cited in 1999 included missing or inappropriate alternative text, problems with tables and frames, and poor use of colors. A study of UK public library Web sites was conducted by UKOLN (Ormes & Peacock, 1999), and, similar to the analysis of higher education Web pages (Brophy & Craven, 1999), this study revealed accessibility in public libraries at that time to be patchy, concluding that “UK public library Web sites are in the early stages of development and this is reflected in the general low level of fully accessible sites” (Ormes & Peacock, 1999, p. 18).

A further study of the accessibility of 162 UK university home pages was carried out in 2002, again using the Bobby accessibility checking tool (and acknowledging its limitations) (Kelly, 2002). The results from Bobby were also compared with compliance with the Web Accessibility Initiative priority levels, and whereas it revealed a trend toward more accessible Web pages, only a small number of home pages appeared to comply with WAI AA guidelines by having no Priority 1 or 2 errors. The study recommended further exploration of the reason for such low numbers.

A study of the accessibility of museum, library, and archive Websites (City University, 2004) tested a sample of 300 such sites in England and 25 international sites, using both automated tools and user testing, for
compliance with WCAG 1.0 checkpoints. Findings revealed that 42 percent of English and 20 percent of international pages only met the basic WCAG level (A), and only 3 percent met AA (when tested with an automated tool). Blind people in the user testing panel found it impossible to complete 33 percent of the tasks they undertook. In general, 22 percent of the problems experienced by the user panel were not identified by automated testing of WCAG 1.0 checkpoints. The most common problems identified were poorly named hypertext links and lack of provision to skip through the navigational links (SKIP NAV) directly to the content. A lack of descriptions for images (ALT text), poor color schemes, and lack of accessibility options were also mentioned. The user panel liked good use of colors to highlight visited hypertext links and when proper links were labelled individually.

The UK Cabinet Office conducted extensive research into the accessibility of Web sites across the twenty-five member states of the European Union and the European Commission to test whether they are meeting the requirements for improving e-Accessibility (Cabinet Office, 2005). The study used a combination of manual and automated testing techniques to assess the accessibility of 436 online public Web sites. The findings revealed that “online public services have a long way to go before they are fully accessible and inclusive” (Cabinet Office, 2005, p. 2) and that the best way to improve the situation is through coordinated efforts among “public policy makers in the EU, Web managers and developers in public sector organisations and Web designers in the software industry” (Cabinet Office, 2005, p. 2).

The report also identified similar studies of the accessibility of public sector Web sites since 1999 and included references to studies from France, Ireland, the UK, and the United States (Cabinet Office, 2005, p. 79). However, according to the report, the “most useful study is the one carried out by the Disability Rights Commission in the UK” (Cabinet Office, 2005, p. 10). The study (DRC, 2004) conducted accessibility assessments of 1,000 Web sites, initially using a software accessibility checking tool and then comparing these with results of detailed evaluation from fifty users with a variety of disabilities. The study found that 81 percent of the Web sites surveyed failed to comply with the most basic of the WAI WCAG levels. Web sites were found to have been designed in a way that make it very difficult for people with particular impairments—especially those with a visual impairment—to make use of the services provided on the site. The report suggests that this is due to a “lack of interest and knowledge on the part of website developers” and from “perceived commercial obstacles to accessibility on the part of website commissioners” (DRC, 2004, p. 9).

The study reported that the group of people who are most likely to be disadvantaged by Web sites that have been designed without taking their needs into consideration are people who are blind and who use a screen
reader to access the Web. The study also found that using guidelines and automated testing tools were not enough to assess the accessibility of Web sites and that involving users—and in particular disabled people—in the design and testing process will help improve accessibility and usability. Involving people with different access requirements (such as disabled people or people using alternative devices such as a mobile phone) will provide a much richer insight into the accessibility of a Web page.

Methods developed by the usability community for user testing can be utilized, ranging from expert approaches such as heuristic evaluation and cognitive walk-through (King et al., 2004), to basic interaction with the users themselves—perhaps simply asking them to comment on their experiences using a site or specific features of a site or service. More formal user testing can be achieved through structured or semistructured task-based exercises with a variety of users using observational and interview techniques (see, for example, Craven & Brophy, 2003), followed by query techniques such as focus groups or questionnaires.

**Accessibility Awareness**

To ensure Web sites are designed with accessibility in mind, it is essential that not only is awareness of accessibility among Web developers increased but that clear guidelines are also provided to enable this awareness to be put into practice. Current evidence shows that there is still some way to go in order to achieve this.

The ENABLED project (ENABLED, 2004) conducted a questionnaire among project partners to establish an overview of the awareness, knowledge, and training needs of Web developers in relation to Web accessibility issues for visually impaired people. Of the 269 responses received, 36 percent indicated that they tried to make their Web sites or applications accessible. The main reason given for not doing this was a lack of knowledge, in particular relating to accessibility features in Web site development tools. This lack of knowledge could be because only 13 percent of respondents said they had received any training in accessibility or usability and could also account for so many Web sites not being as accessible as they could or should be.

The Disability Rights Commission study (DRC, 2004) undertook an assessment of technical and commercial considerations that are discouraging the adoption of inclusive design. Responses revealed that 95 percent of Web site commissioners surveyed regarded the Web as an important resource and potential means of communication with customers. Levels of awareness of accessibility and inclusive design appeared to be quite good among large organizations, but less so among small- and medium-sized organizations. The main barriers to achieving accessibility were cited as the following:
• Perceived cost of accessibility in terms of money, time and staff resources
• Low level of knowledge about the issues and how to address them
• A perceived lack of simple guidelines, expertise and skills
• Obstacles presented by the increased demand for graphics and other technical constraints
• Conflict between accessibility and other considerations e.g. creativity
• General lack of awareness about the issues and their potential importance (DRC, 2004, p. 37)

Responses from the Web site development agencies suggested that 80 percent attempted to develop accessible sites at least some of the time. However, the Web site development agencies reported that customers were often uninterested or lacked knowledge about accessibility, although when presented with the business case they could be persuaded of the importance of accessibility for increasing usage.

Levels of accessibility expertise among Web site developers were low, although 70 percent claimed to conduct user testing. Methods for this were automated tools, use of the WAI Guidelines, and use of the RNIB Guidelines. The main problems in developing accessible Web sites were similar to those cited by the Web site commissioners, particularly:

• cost in time and resources;
• lack of knowledge;
• lack of authoritative guidance; and
• conflict with aesthetic and other design considerations. (DRC, 2004, p. 38)

Similar reasons for noncompliance with Web accessibility recommendations were cited in a study of 175 Webmasters in the United States (Lazar, Dudley-Sponaugle, & Greenridge, 2004).

In 2005 the SupportEAM project conducted an online survey on stakeholders’ needs for a European e-Accessibility certification scheme (http://www.support-eam.org/). The survey covered commercial and noncommercial stakeholders and produced some interesting results relating to levels of Web accessibility awareness. For example, 80 percent of the 450 respondents said that they took accessibility into account when commissioning their Web sites, but of these, only 35 percent said they checked them for accessibility. Seventy-five percent of the respondents also stated that they would like to have some kind of methodology and criteria to achieve e-Accessibility certification of their Web sites. The conclusion drawn from this was that although people are aware of accessibility issues, they do not necessarily fully understand them or know how to implement them.

The EIAO project also undertook a survey of stakeholders to establish the need for the proposed European Internet Accessibility Observatory (see Craven & Snaprud, 2005). Distribution took place to an initial sample
of fifty organizations identified as potential stakeholders. These included Web developers, Web designers, and Web service providers. As well as establishing the need for the Observatory, the findings also showed that stakeholders surveyed had an understanding of the importance of accessibility issues and of methods available to help guide them toward creating better Web sites. However, it cannot be assumed that all stakeholders will have this level of awareness, as some respondents commented that people they have to liaise with (for example, managers, policy makers, externally appointed Web designers) are often less aware of these issues.

Despite the fact that the majority of stakeholders surveyed showed awareness of accessibility issues and were in support of "design for all" principles, not all were actively involved in creating accessible Web sites. This was often dependent on the nature of their organization and work (that is, customer driven, resource driven, outsourcing, etc.). Stakeholders who were involved in addressing accessibility (through design, liaison, advice, etc.) cited a number of tools used to help them design accessible content, the most popular methods being the use of guidelines and standards. Respondents who said they regularly checked their sites for accessibility cited a combination of tools (automated, manual, external audits) rather than any one particular tool.

Respondents were very positive about having extra information such as suggestions on how to repair faults as well as a ranked list of improvements needed to make their site more accessible. They also mentioned the need to raise awareness about accessibility so that all those involved know why it is important, not just what needs to be done.

A common theme can be seen throughout the surveys described above. That is, whereas awareness of accessibility issues and the importance of accessible Web design undoubtedly exists, there is still a lack of understanding relating to the specific reasons for applying accessibility features to a Web site, as well as a lack of knowledge of how to implement them systematically and effectively. Could this be the reason that so many Web sites still do not meet accessibility requirements?

In the Cabinet Office study of the e-Accessibility of public sector services in the European Union, no less than twenty-one recommendations are made for policy development. The recommendations are aimed at public policy makers at EU level and in the Member States, Web managers and developers of all public sector organizations, and finally Web designers in the software industry. This final group is addressed in recommendation 19, where it is suggested that there is a need to "train all web designers in both the requirements for, and the techniques to achieve, fully accessible websites" (Cabinet Office, 2005, p. 62). This short but vital recommendation to the "software industry" should be broadened further to include any organization or institution that provides training courses in Web design. For example, departments of library, information, and com-
Communication studies integrate accessibility awareness and solutions into any modules related to Web design or the provision of Web-based content.

A great deal of emphasis has been placed on the importance of Web accessibility and the need to adhere to standards and guidelines. The W3C WCAG in particular have been adopted by many public and private institutions as an indication of what level of accessibility their Web sites should reach. How the new version of WCAG (WCAG 2.0) will translate onto the many guidelines and policies developed by institutions and companies remains to be seen, and as Carey argues, the challenge for Web designers and developers “will not be the actual standard so much as finding tools to measure compliance” (Carey, 2002, p. 24). Continued work on a more holistic approach to accessibility, such as the recommendations for e-learning accessibility made by Kelly, Phipps, and Howell, will further complicate methods for assessing and measuring compliance; the holistic approach sees a need to “provide accessible learning experiences, and not necessarily an accessible e-learning experience” (Kelly, Phipps, & Howell, 2005), which are not necessarily bound by compliance to a set of checklists.

Although awareness of Web accessibility issues is increasing, results of various studies identified in this article have shown that a lack of knowledge still exists in how to implement Web accessibility and that there is a need for more effective guidance. This conclusion is confirmed by the continued widespread failure of Web sites to be fully accessible. After the DRC study (2004) was undertaken, the Disability Rights Commission in the UK commissioned the British Standards Institute (BSI) to produce new guidance to help increase knowledge and ability of Web developers and commissioners to implement Web accessibility effectively. Although the BSI is producing the guidelines, they will not be published as a full British Standard as this can take years to be approved. Instead, the guidance has been produced as a Publicly Available Specification (PAS), published as “PAS 78: Guide to good practice in commissioning accessible Websites” (BSI, 2006) It came into effect on March 8, 2006, and can be updated on a regular basis—generally after a period of around two years. It is therefore more in keeping with the rapid development of Web technologies.

Conclusions

Library researchers have been prominent in exploring ways of improving Web accessibility for the last decade. They have brought to the field an overriding concern for a user-centered approach, which has led to a series of user-focused studies showing precisely where common approaches to Web design have been failing those with disabilities. Projects such as REVIEL and NoVA, which were devised and undertaken at CERLIM, enabled the areas needing attention to be pinpointed and showed how targeted effort,
often quite modest in extent, could transform accessibility. A combination of improvements to access technology and adoption of “design for all” principles, coupled with staff and user training and awareness raising, has been shown to have significant, positive results. Over this period of time, libraries throughout the UK and elsewhere have been encouraged to mainstream accessibility, and, partly as a result of new legislation, to maintain the issue high among their priorities.

More recent research initiatives, exemplified by the European WAB cluster and by the development of the W3C WAI WCAG version 2.0, show that the research momentum is being maintained. That a library-oriented research center like CERLIM is heavily involved in this work through projects like EIAO can only be positive for the development of the profession’s practice in this area.

**REFERENCES**


BROPHY & CRAVEN / WEB ACCESSIBILITY


Lewis, A. (2004). A user survey of the experiences of blind and visually impaired people using electronic information services, with regard to the practical implementation of these services in public libraries. Aberdeen, Scotland: Robert Gordon University, Aberdeen Business School.


Peter Brophy is Director of the Centre for Research in Library and Information Management (CERLIM) at the Manchester Metropolitan University (MMU), and holds the Chair in Information Management at that university. He has directed a number of international research projects, including a variety of large European Commission Telematics/Information Society Technologies–funded projects in the area of library and information services. He directed the UK’s Resources for Visually-Impaired Users of the Electronic Library (REVIEL) and Non-Visual Access to the Digital Library (NoVA) projects and is directing MMU’s input as project partner to the EC-funded European Internet Accessibility Observatory. He is the author of The Library in the Twenty-First Century (Facet Publishing, 2001).

Jenny Craven is a qualified librarian and works as a Research Associate at the Centre for Research in Library and Information Management (CERLIM), Manchester Metropolitan University. She has worked on a number of research projects concerned with Web accessibility and usability, with a particular focus on access to information by blind or visually impaired people (see http://www.cerlim.ac.uk/projects/index-accessib). She is also a Council member of the National Library for the Blind. Jenny has delivered conference papers and workshops in Europe, Central and South America, and Asia and has published widely. She is currently working on an EU-funded project: the European Internet Accessibility Observatory (further details at http://www.cerlim.ac.uk/projects/eiao/).
The Impact of the Integrated Digital Library System on the CNIB Library

MARGARET McGRORY, MARGARET WILLIAMS, KAREN TAYLOR, AND BARBARA FREEZE

ABSTRACT
Technological change has been the norm for libraries serving people who are blind or otherwise print disabled. Technology is required to produce and disseminate books in various formats, and technical devices are often used as a means for a person to read the books. However, the development of digital technology combined with the evolution of the Internet has prompted significant change for library services and operations in the past few years. The CNIB Library recognized the opportunity to create more content faster, provide more choice and accessibility, and to streamline and revolutionize processes by building the Integrated Digital Library System (IDLS) in partnership with industry technology leaders. This article describes the technology of the IDLS and the impact on the organization.

“For many people, technology can make things easier. For people who are blind, technology makes things possible.”
— Jim Sanders, President and CEO, Canadian National Institute for the Blind

INTRODUCTION
Libraries have always relied on the evolution of technology to acquire, organize, and disseminate information. It can be argued that libraries serving people who are blind or otherwise print disabled are often a step ahead with technical innovation. These libraries must often produce the very materials that other libraries would purchase for their collection. In the case of libraries for the print disabled, technology is required by the library to produce that book in audio, braille, or tactile format. A person who cannot read regular print must find other means of reading; techno-
logical devices to magnify print, electronic braille, synthetic speech output or human-narrated audio books are current options. Finally, libraries serving people who are blind are often centralized but serving a population scattered nationally. Technology is required to support this service-delivery model.

In 1997 the CNIB laid out a road map with yearly objectives to reach the goal of fully trained staff and volunteers operating in a digital environment and producing digital products to be delivered from Web-based services as well as distributed by traditional postal methods. In 2000 CNIB developed a plan for an Integrated Digital Library System (IDLS). The reasons for this were twofold. On the one hand, CNIB’s decision could be seen as one born of necessity and survival given the cumbersome and increasingly obsolete nature of analog production and distribution technologies, upon which libraries for the blind have been dependent for the previous quarter century. However, the vision was also a result of the synchronicity of the development of digital technologies and the evolution of the Internet, which presented opportunities to dramatically improve the timely delivery of accessible content to print disabled Canadians. Such opportunities would have been unconscionable to ignore given the dearth of published material available in alternative formats and the length of time required to convert this content into alternative formats.

The following principles guided the development of the IDLS:

**Library Service**
- Expand and improve choice in formats and access points
- Enable independent management of library services by the end user or “client”
- Decentralize service and allow for seamless community or home access to a national service
- Expand content and ultimately eliminate the gap in availability between print and alternative formats

**Production Processes**
- Streamline and automate production processes and create the “single source file/multiple formats output” model
- Store, archive, and preserve the collection
- Adhere to international standards

This article will discuss the impact of the development and implementation of the IDLS on the CNIB Library. The first section describes the service impact, the second describes the impact on book production, and the third describes in more detail the core technology.

What, then, is the IDLS? What constitutes an IDLS varies from one library to the next. From the earliest conceptual stages CNIB defined its IDLS as an integrated system to handle the creation, management (ac-
quisitions and cataloging), preservation, and distribution of all its digital
library content.

BACKGROUND: ABOUT THE CNIB LIBRARY

The CNIB Library provides print disabled Canadians with access to a
collection that is comparable to that of a medium-sized public library but
with national scope and unique formats. A print or “perceptual” disability
includes vision loss, a learning disability such as dyslexia, or a physical
disability that prevents the holding of a print book. The library service is
just one of a number of services CNIB provides to Canadians who have
vision loss. A sample of other services include teaching white cane skills,
vision enhancement techniques, and daily living skills. While most CNIB
services are provided locally in communities across Canada, the library
is centrally managed. The service is directly available to registered CNIB
clients—more than 100,000 people who have vision loss. For those with
a print disability other than vision loss the service is available through
community partnerships, such as public libraries. A cost recovery fee is
charged to the partner agency.

The CNIB Library is somewhat unique in that it is one of the few librar-
ies for the blind in the world not federally funded or government owned.
The CNIB is a charitable organization and receives approximately 80 per-
cent of its funding from donations from the private sector. The govern-
ment provides some project funding, and Canada Post provides the highly
valued service of free library postage for people who are blind.

The Collection

The collection reflects the reading and information needs of all ages,
education levels, cultures, and regions within Canada, in English and
French. Since the inception of the CNIB Library in 1918, format circula-
tion went from a single format (braille) and increased over the years to
nine formats now available in 2007: braille, print-braille, tactile, DAISY
audio, online digital audio, online resources, e-text, e-braille, and de-
scriptive video. The CNIB Library currently has 60,000 titles and 400,000
items/copies in its physical collection and more than 25,000 electronic re-
sources including books, magazines, and newspapers accessible through
the CNIB Digital Library. Newspapers and magazines are also available
by phone. For children, the library provides access to specialized online
resources such as chat rooms, games, and homework help.

Unique Ways of Serving

Because the library is located centrally, clients access services in the
following ways: receiving books and other materials in the mail, accessing
books and information resources online, and/or by visiting their local
library. Phone access is also available for some resources. A core team of
Reader Advisors registers clients for services and in most cases will create a personal profile for the client containing format preference, language, service frequency, subjects (fiction and nonfiction), and authors. A profile also indicates if the client does not want to receive material that includes strong language, violence, or explicit sexuality. The library’s system compares the service profiles with what is available and selects items to send to each client. An item card with the client’s address is printed, and circulation staff retrieve and ship the item to the client by mail. Including online materials, the library circulates 1.8 million items a year.

THE IMPACT ON LIBRARY SERVICES

Library Services before the Digital Transformation

To grasp the full impact of the digital transformation of the library, it is useful to know how library services used to operate. Reading profiles for clients and book shelving and retrieval were functions managed in a completely manual way. In earlier days, with few formats, the mode of service delivery was well defined and straightforward. When the library implemented an online library system, staff in local CNIB offices across Canada signed up clients for library service. Reader Advisors assisted clients primarily over the phone to refine service profiles or suggest reading materials, and the automated system selected materials for shipping by mail. Clients had few technology needs or decisions to make, as their local division provided a free permanent loan of a standard 4-track cassette player upon starting of library service, and Reader Advisors were the gatekeepers to collection holdings. Reader Advisors and local division staff had encountered most issues that could affect service and could rely on scripted responses.

The collection was fairly small and contained due to manual production of alternative formats and limitations with producing copies. While not ideal for clients, a relatively small collection in limited formats made management of the service straightforward compared to the postdigital transformation of library services.

First Steps to Digitization and the Leap

Three important service implementations beginning in the early 1990s paved the way for the implementation of the Library’s IDLS: the online catalog, automated circulation, and the introduction of digital books and online information resources.

The Library had changed little over the past thirty years. Then, within a period of just three years, the digital transformation radically changed both the types of services offered and how they are delivered. Established services and modes of delivery, which were well known to clients and staff, now seem simple compared with the complexity of a digital environment.
The transformation has not meant simply automating old processes, or “paving the cowpaths,” but doing things differently.

The CNIB Library made the definitive leap from the old to the new way of doing things on November 23, 2003, with the launch of the CNIB Digital Library and Children’s Discovery Portal. Built in partnership with Microsoft Canada and recognized by Bill Gates as a foundation for the global library for the blind, this platform was unveiled with public fanfare and promoted around the world. A year later, on June 30, 2004, the CNIB Library made a second leap when it stopped producing analog formats.

The CNIB Digital Library (CDL) is the public face of the IDLS; it is a secure, password-protected, accessible Web interface specially designed for persons with perceptual disabilities. The CDL provides instant access to works in electronic text, electronic braille, and digital audio files.

**Digitization Goals Achieved Post-2003**

The following goals for creating the IDLS have been met:

- The economical expansion of choice through accessible online resources. When the online version of the Encyclopedia Britannica was offered to clients, one young blind high school student called to say this was the first time she was able to use an encyclopedia. It had not been produced in braille or audio due to the length and enormous expense.
- Clients can independently manage their service if they choose. Clients can go online and browse and order or instantly read books and information resources without relying on an intermediary. They may also change display features and personally customize search preferences, among other options in their own personal online profile. (See Figure 1 for client comments.)
- Partner libraries (public, academic, and school) can seamlessly access the Library’s collection online to provide services directly to their patrons.
- Predigital, many libraries were using a variety of cassette formats including 2-track, 4-track, and 6-track, making resource sharing difficult or in some cases impossible. Digital technology, and specifically the DAISY standard, has facilitated greater resource sharing.
- Improved audio book experience. The move to digital and the DAISY standard is a significant improvement over analog and commercial audio; the entire book fits onto one CD, the sound quality is better, and the client has more control over his reading experience with the capability of navigating pages, sections, etc.
- Wireless check in and check out. All books are shelved according to barcode placement and checked in or out via a wireless laptop on wheels. When the Library moved into its new headquarters in 2004, circulation staff checked in 75,000 Library items in three days. Books can be sent more quickly from one client to another.
There are also many challenges that come with digitization:

- Clients require various levels of technical skill and access to technology to read books in alternative formats. This includes access to and understanding of talking book machines, Internet access, and adaptive technologies. While technical troubleshooting is not a library function, it is reality that clients will turn to the library for support. Some Reader Advisors have developed specialized knowledge of adaptive technology to assist clients when accessing library resources. They must decide if an issue is related to the service, technology, or client skill level. Controlling the amount of time spent on technical support is an ongoing challenge.

- The move to a digital format also posed a significant challenge for staff in the deployment of players. With previous transitions, the client base was smaller, and there was one standard and less complex player that was provided on long-term loan. Now, clients purchase their own DAISY players, and CNIB continues to raise funds for those who cannot purchase their own. Local front-line staff were required to inform clients about the change from loan to purchase, introduce a selection of players, and provide training. These were significant changes.

- A three year transition period was planned to allow clients time to purchase players and the production team to convert the collection to digital. During 2004-07, the talking book service was provided on two platforms—analog and digital. This had a significant impact on local front-line staff, library reader services in managing calls, and the library circulation department. For example, when the library ceased analog production (not circulation) in 2004, the analog collection was no lon-
ger refreshed or repaired, so it diminished and deteriorated during the three-year transition. This meant fewer books for clients who had not yet made the transition to DAISY and, therefore, more demand on staff responding to inquiries. The circulation team had to work with packaging and shelving issues caused by managing two talking book formats.

- The CNIB Library produces its own content under the exception for persons with perceptual disabilities in the Canadian Copyright Act. However, it remains sensitive to copyright owners’ increasing concern over digital content and, as a result, has taken extra steps to ensure its practice and procedures regarding access to this content are transparent.
- Content selection has become a complex process. A digital environment should provide access to every title in a variety of formats so clients can choose the one that best meets their needs. A complete “set” of just one book can include five formats. To avoid duplication in production, collections librarians must consider potential sources for each format carefully. A set for one title might come from multiple sources: for example, DAISY and electronic braille from libraries in the UK, hard copy braille from the United States, electronic text from a public domain repository, and online digital audio through an online subscription service. Even when an item can be purchased, it often requires additional processing or specialized instructions to make it fully accessible to clients.
- A global standard (DAISY) for producing talking books is a significant benefit. However, interestingly and unfortunately, the move to a digital format in some instances has limited previous resource-sharing arrangements. For example, the United States service Recordings for the Blind and Dyslexic permitted Canadians to borrow from their valued collection of educational materials on cassette. When they moved to digital DAISY books they were no longer able to lend these materials to non-U.S. residents. This was a huge loss to Canadians who cannot access print and meant that resources had to be produced twice.

**The Production Systems Impact**

CNIB Library is Canada’s largest alternative format producer. The production platform supporting the Library is housed in Toronto, Montreal, and Winnipeg. Working in English and in French, a team of 66 staff and 620 volunteers create books and magazines in braille, audio, and accessible electronic text. Tactile images created for braille textbook materials are produced both digitally and by hand-crafted methods. The range of material is vast, from romantic novels, to children’s storybooks, popular biographies, textbooks in advanced biology, a calculus exam, and complex technical manuals. The challenge was to improve production processes so that audio books sound better, braille would be produced faster, and accessible text be made available.
From the beginning, the “holy grail” was the “single source” text file—an encoded file that could be read by adaptive technology, transformed into braille, enlarged on a computer screen, rendered in synthetic speech, and integrated with human narration for superior audiobooks. Just as the print publishing industry has discovered the relative ease and economic benefit of repurposing digital content, CNIB wanted one source file to be used for many outputs. DAISY, an open standard for text encoding, built on the common Web technical standards of XHTML, XML, MPEG3, and SMIL and promised the flexibility sought for the single source file concept.

**Transforming Production: The Human Resource Challenge**

Nowhere was the challenge more difficult than in the area of human resources. Suddenly there was an increased demand for skills in both staff and volunteers. Often, the remarkable skills that people brought to their jobs, such as describing a diagram or accurately narrating a book, were still needed, but now excellent technical, analytical, and problem solving skills were necessary as well. Staff were using increasingly sophisticated programs, balancing system resources, and participating in international standard-setting bodies. New production methods required such skills as text markup, CD-R duplication system operation and maintenance, and expert opinion on digital audio requirements of compression and sampling rates.

It was essential to inventory staff and volunteer skill sets, compare them to the required talents, and document the gap. Subsequently, new job descriptions were developed, training programs introduced, and some tough decisions made as to the suitability of our workforce. Some volunteers were gracefully “retired” and some staff left the organization. Newly hired staff now had advanced technical skills such as computer science degrees, digital audio recording experience, and in-depth knowledge of production systems. Volunteer recruiting took into account the need for excellent computer skills, and recently retired baby boomers often fit the bill.

**Electronic Publishing: Implementation of a New Unit**

Previously operating in either braille or audio mode as separate production entities, CNIB realized the need for a center of expertise in creating and encoding text files, the output of which would then feed into the alternative format production streams. Staff in this area needed excellent desktop skills and advanced knowledge of mark-up languages. Initially all books were cut apart, scanned, proofread, and edited for accuracy before they were handed off to the next process in the production stream. Complex technical and educational material required manipulation of tables, screen shots, and code listings. Books required structured markup to sup-
port levels of accessibility in accordance with the type or complexity of the book, to the point, for example, where a reader of a cookbook could go directly to the recipe for chocolate mousse.

Throughout this evolution, publisher cooperation was sought, but often the publisher, although willing, did not have the text file that corresponded to the print book. That file had remained with the printer or been discarded after the final print file was created. An ill-formed file, or a file produced in an old format, is virtually useless; it is quicker to scan and code the book than decipher an unfamiliar format. A complete and final publisher’s file is golden—it eliminates delays and avoids potential inaccuracies. Recent years have seen the digital transformation of the publishing industry. The CNIB contracted for the delivery of files from major publishers such as McClelland and Stewart, Random House Canada, and Harlequin. Staff became expert in using publisher’s online permissions forms, and a pilot project in 2005-06, the Electronic Clearing House for Alternate Format Production, sponsored by the Library and Archives of Canada and the Canadian Library Association (http://www.collectionscanada.ca/accessinfo/s36-206-e.html) provided access to publishers files within ten days of request.

As CNIB progresses, text files are increasingly coded to the DAISY/NISO Standard 2005 (previous standard ANSI/NISO L39.86) specification, but there are limitations in the human resources required to hand-code files. As publishers move closer to supplying usable files, and as conversion routines are developed to support transforming these files to DAISY format, more books and magazines will be created from this single source file.

**Braille Transformation**

Braille production has been transformed by digital technology. As early adopters of computers, braillists created electronic braille files by keying words directly into a file using braille conversion software in a manner similar to using desktop word processing programs. These braille files were archived on a variety of media over the years and transformed to current versions when a copy of a book was requested. Now the CNIB Electronic Publishing Unit provides braillists with accurate text files to be processed through braille translation software. Programs such as DUXBURY, a braille translation package, imports files in various text formats, then translates to braille with one command. The braille displays on screen exactly as it will look when embossed, and the braillist can edit and correct errors in the files. Braillists’ expertise is still very much required to resolve complex braille formatting issues. The resultant braille files are then sent to high-speed embossers and made available on the CNIB Digital Library for clients to read. Experiments importing DAISY/NISO 2005 encoded text files into DUXBURY to create braille files have been extremely promising.
Audio Transformation: Cassettes to CDs and Online Reading

Although CNIB was committed to utilizing new technologies, the evolution of technology in the music industry also forced the change. It became increasingly difficult to source cassette tapes. CNIB consumed over 500,000 per year. The equipment to record onto analog open reel tapes and make cassette copies was rapidly becoming obsolete and expensive to maintain. (See Figure 2 for an analogue recording station.) Replacement parts for this equipment were found on e-Bay or scrounged from a generous supplier’s backroom. The crown jewels were the master recordings on open reel tapes. These tapes had to be stored off site in an expensive climate-controlled environment after a cassette sub-master and the required number of cassette copies was made. There was no choice but to move to digital recording.

As early adopters of the DAISY standard, enthusiastic CNIB recording studio staff were experimenting and participating in software development. The first CNIB DAISY book, *From Aligoté to Zinfandel* by Tony Aspler, was recorded in 1996. A book of wine appreciation that features a guide to wine terminology and proper wine pronunciation was a perfect candidate to showcase the features of DAISY. An audio reader looking for information on Beaujolais could go to the index, find the page reference, and go directly to that page—access that was never possible on a cassette book.

CNIB continued to record and test DAISY books, but there were no funds to convert recording facilities and the operation continued in an analog environment. Then in 2000, in honor of the millennium, the government of Canada provided a grant to assist with the conversion of the production platform. In 2001 the first proof of concept for the single source file was created. Canadian publishers provided digital files for five recently released titles and these files were transformed to the DAISY source file. From this file DAISY audio books, braille books, and screen reader–friendly text files were produced.

With three of the fifteen recording booths digitally equipped, CNIB began recording books for CD distribution. (See Figure 3 for a digital recording station.) The initial deployment of DAISY books began in January of 2002 with a small number of clients equipped with digital talking book players. Gradually, as funding became available, studio booths at all three sites were equipped with computers and digital audio recording software. In 2001 25 volunteers were trained in the recording process; by 2003 all 443 volunteers were proficient in using the recording software, and all master recording was in digital format.

To preserve an audio collection that was produced over decades it was necessary to convert analog titles to digital. These titles are still being converted to digital DAISY format in a two-step process that creates a digital file from the analog master reels and then passes this digital file on for DAISY markup and indexing. CD copies of the book are then added to the circulating collection.
As the digitization project progressed, the expense of maintaining two production streams increased, due to both the process of creating content digitally and then converting it back to analog for cassette distribution and the effort to keep the old processes from impeding the introduction of new processes. There were some cost savings; the cost of CDs decreased as the format became more popular in the mainstream, an entire book fits on one CD rather than multiple cassettes, and there was a lower damage rate with CDs. Monthly magazine compilations on CD reduced costs and provided a “magazine rack” to clients in one mailing. Costs were further reduced in 2004 when all new CNIB audio books and magazines were produced exclusively in digital format and the conversion back to analog ceased. (See Figures 4 and 5 for cassette and CD duplication stations.)

**More Content and Formats**

With the launch of the CNIB Digital Library all content had to be available for online access. Knowing that client home computers could not easily handle the download of an entire DAISY book, CNIB provided “progressive play” online digital audio (ODA) books and magazines for clients. In the course of two months, a team of three contract employees, each equipped with five workstations, reformatted over 1,300 DAISY digital
audio titles for instant online reading. An added bonus resulting from the project included regenerating these DAISY titles to DAISY 2.02 with the newest DAISY validation tools, a process necessary for ongoing DAISY production. Content from other organizations is also prepared for online reading and posted to the CNIB Digital Library.

Titles acquired from partner organizations such as the Royal National Institute of the Blind (RNIB), although “born digital,” need processing to meet CNIB requirements. A set of requirements detailing compression rates, file naming conventions, digital audio specifications, etc., for incoming content were prepared and scripts created that modify the DAISY books by replacing RNIB specific messages to clients (for example, “return this book to RNIB”) with CNIB information.

In the interest of increasing audio content without increasing staff and volunteer resources, CNIB experimented with Loquendo, a text-to-speech (TTS) software program. Clients value good human narration, but TTS production can result in more content faster. Some magazines and topical information resources that have a limited life span were suitable for TTS production. CNIB also experimented with using synthetic speech to record indices in books. The indices were rarely recorded in the past as they had little value on a cassette tape. However, the DAISY standard has made
this portion of the book highly usable. The body of the book is narrated with human voice and the indices produced with TTS software. This alone saves several hours of “booth time.”

One of the problems found in using TTS software was incorrect pronunciation, especially of proper names or words with origins in different languages (for example, “quesadilla”). A continually growing custom pronunciation dictionary was built to address this problem. While the first few books produced using TTS actually took longer to produce than a human narrated book, the opposite is now true.

Transforming Library Technical Services

Catalogers developed methods for creating records for new formats such as electronic braille and online digital audio (ODA). Some of the material to be cataloged was “click through” content such as the e-book and audio book resources of NetLibrary, which CNIB clients accessed through the CNIB Digital Library. The Online Computer Library Center (OCLC), owners of NetLibrary, supplied complete MARC records containing the standard bibliographic information for e-Audiobooks (electronic or online digital audio books), including narrator, duration of book, format, and file size. Scripts were developed that modified the OCLC record for CNIB’s catalog.
All titles are reported to Library and Archives Canada’s AMICUS, the Canadian National Catalogue listing the holdings of libraries across Canada (http://www.collectionscanada.ca/amicus/). This ensures that CNIB’s holdings are available nationally and internationally. This database also serves as a record of works in progress so that no other production facility wastes scarce resources producing an alternate format version of a title when one is underway.

**Production Implications: Looking Forward**

The relentless progress of technology has meant that production systems that had previously lasted twenty years or more now change with increasing frequency and require acquisitions of hardware, software, and new staff skills on a regular basis. New tools and client use must be continually
evaluated and tested. Relationships with outside vendors have formed in the areas of hardware and software acquisition, and outsourcing companies are evaluated for their potential to perform certain functions that may provide lower costs or variable capacity.

CNIB is totally reliant on the technical infrastructure—if the network is down, almost all functions halt. Staff must coordinate proper data management and backup at all sites. The limitations of one piece of software can cause major problems in an integrated system and software and tools must always be accessible. Staff must be receptive to continuous process improvement and to ongoing requests for new or improved functionality.

Motivating staff and volunteers to embrace technology and understand the vision behind the process improvement has been challenging. In production areas, as expertise and tools evolve in the areas of digital publishing, the lines between format processing (what is created for braille as opposed to what is created for audio) become blurred and will gradually disappear. The future is bright for more timely production of alternative format books. In addition to only having access to less than 5 percent of what is published in print, clients would have to wait months or even years after the print publication for an accessible version. Digital developments have transformed their opportunities. Information resources such as newspapers are now electronically available at the CNIB Digital Library before the paper version can be delivered to the front door. Previously it could take two months of production time to produce a braille version (acquiring, scanning or typing, proofreading, embossing); now with direct access to the original publisher file, it can take two weeks. The ultimate goal is simultaneous production in all formats, including print.

**The CNIB Integrated Digital Library System Infrastructure**

It was the revolutionary nature of CNIB’s vision that attracted the technology partners that worked with the Library development team to create a solution. These partners—Microsoft, IBM, Open Text, Geac, Navantis, and Corus Entertainment—made expertise and technology available that would eventually result in the IDLS.

The IDLS was designed to evolve as 3 integrated modules:

- The Digital Handling System (DHS)—a repository and distribution component
- The Production and Sales Management System, which manages the production of digital assets with the concomitant scheduling of work and resources
- A new integrated library system, which would continue to provide traditional library functionality of acquisitions, cataloging, and circulation of physical materials.
While both library and manufacturing systems exist “off the shelf,” the DHS was a different matter, and it was this component that the CNIB and its technology partners set out to design and develop as a first step.

Logical Architecture

In accordance with CNIB Library’s requirements, the system was designed on a Microsoft Windows/.NET platform, which is scalable and extensible, as well as being a reliable and cost-effective solution platform. The infrastructure consisted of the components identified in the logical architecture of the DHS system presented in Figure 6.

The E-Delivery System is the user facing interface where clients can browse, request, and access a variety of content from the traditional library catalog via the Web; available content includes online books and magazines, newspapers, encyclopedias, and dictionaries. This piece is known to clients as the CNIB Digital Library and Children’s Discovery Portal. The Web delivery system uses Microsoft Commerce Server as its core functionality, providing the elements of a shopping basket similar to Amazon.com and other online commerce sites with the single exception being that this Commerce Server application is a zero dollar–based shopping basket. Clients can conduct a bibliographic search of the online catalog for books of interest, listen to online digital audio books directly by means of streaming media tools, or “check out” a book for delivery through the mail. The catalog is rebuilt each day with up-to-date bibliographic data from the digital repository and circulation system.

Unlike most other accessible Web sites, the E-Delivery system was built from the ground up to be accessible. User case studies and the participation of blind and visually impaired clients from its inception guaranteed a high degree of accessibility. The E-Delivery system is designed to ensure that Library clients can employ their preferred access technology.

Digital production requires a secure repository for all digital assets, whether works in progress or completed titles. Open Text’s digital asset management system administers user rights, security management, and metadata management. It also provides a workflow engine that manages the movement of an asset through the library process to its ultimate destination either as a distribution master or an archive master. Record management classifications were developed that govern the lifecycle of digital assets and rules set for what would be maintained for a month, a year, permanently, etc.

Functions were developed to manage books with multiple files, and a multiple book “Check-out, Check-in” feature manages multiple audio books being produced in several booths over several daily shifts. A customized user interface was developed for accessibility with screen reading software.

The Geac Advance System is used for acquisitions, cataloging, and circulation of physical assets. In the context of the DHS the Advance System
updates the bibliographic information in the E-Delivery system, while E-Delivery places hold requests for physical digital assets (talking books on CD, braille books, etc.) with Geac Advance for circulation via Canada Post to the client.

The final major component of the technology infrastructure implemented as part of the IDLS was a Storage Area Network (SAN) upon which to store the Library’s digital content, as well as Tivoli Storage Manager (TSM) software to manage that content. The entire area of storage technology and storage capacity was challenging. Consider that the majority of files to be stored are audio files, an average book is twelve hours in length, and there are thousands of complete or in progress audio books. Many organizations face challenges with data storage and retrieval. CNIB faces the additional challenge of storing a data type not traditionally managed by, for example, the manufacturing, banking, or insurance industries. As a result there was limited industry experience to draw upon when developing best practices.

**Physical Architecture**

The overall physical architecture is based on industry standard best practices for security, redundancy, and scaling. Security is tightly integrated with the Microsoft Active Directory. This model allows a server (or set of servers) to act as the authorizing authority for asset access—the gatekeeper role. The security model is further divided such that guests accessing the CNIB Digital Library have less authority than registered and authenticated CNIB clients, who in turn have less authority than authenticated staff.

Redundancy of the production environments was accomplished by the
use of the Microsoft Clustering Service. In this service, multiple servers are connected together and present themselves to the client’s community as a single virtual server. The cluster of servers then responds to the client request for service in a manner that makes the client think the request was answered by a single server. The benefit of this deployment model is that if a server fails or if the load is greater than what a single server can handle, the client does not experience any delay.

Organizational Impact

The Information Systems Organization The IDLS brought with it significant changes in the responsibilities and core competencies of CNIB’s Information Systems (IS) organization. Prior to the advent of the DHS project, the IS Operations departmental focus was primarily on desktop support for standard office applications, email, and application support for a few enterprise-wide applications, specifically, financial and fund development systems and the Geac library and production systems.

In contrast, the DHS infrastructure mandated that the following resources be applied:

- A technical systems manager to monitor and manage the overall technical solution including system security
- A storage specialist with comprehensive knowledge and extensive experience in working with Tivoli and the SAN environment
- An experienced technical specialist to manage the application, which had been heavily customized for the CNIB’s purposes
- A SQL resource to write scripts in SQL and Windows
- A Web master to support the Library’s information management on E-Delivery portals

In addition, IS had to increase its technical support to take care of accessibility issues and to support users at the workstation level and in the Recording Studio.

The Technology Blueprint With the infusion of the IDLS technology, the worldwide portal access to Library services, and a Data Centre with complex technology, the CNIB’s technology environment was, to quote Margaret McGrory, the Vice President and CIO of CNIB and Executive Director of the Library, “all grown up.” CNIB now owns and operates a significant and complex hardware, software, and networking infrastructure. IS now leverages technologies brought to CNIB via the Digital Library Systems project to the benefit of the entire organization.

And indeed going forward the CNIB has used the digital library technologies as a springboard to an enterprise architecture that deploys a nationwide integrated approach to the management and support of its client and business information. Gradually, as the IS transformation takes
place, CNIB is moving from being an organization of diverse and disparate systems to an organization with an integrated technology infrastructure building upon the systems, tools, and resources required for the IDLS.

Finally, the DHS project generated significant project management expertise such as business analysis, business process re-engineering, application and enterprise architecture, data modelling, project management, and training and testing specialists. Under the auspices of the Technology Blueprint, a project management office was established in January 2004 to fulfill the following mandate:

- All new business applications will be developed from concept through implementation in concert with IS, and will be supported by a business case, appropriate approvals, and standard project management methodology.
- All new applications will be designed to deploy industry-standard user interfaces where possible, and provide a consistent look and feel. Benefits include lower costs for training and support, and over time, reduced costs for developing business solutions.

CNIB continues to maintain its relationships with its technology partners and has also attracted new partners such as Cisco, Hewlett Packard, and Bell Canada as it continues to evolve its digital library’s infrastructure and content. As well, a number of organizations for the blind around the world have expressed interest in components of the CNIB’s IDLS for their libraries, paving the way for a future global library for the blind.

CONCLUSION

To look back, the development and implementation of the IDLS was not simply a means of enhancing current services and production streams using new technologies. The IDLS transformed the CNIB Library and replaced an operation that had evolved but had not fundamentally changed since 1918. In 2003 the library literally detached from the concept of the library as a physical place, and the impacts were enormous. Internally, the library is now in a position to be part of the global library for the blind, workforce skills and business processes have dramatically changed, and the organization as a whole now has the ability to manage complex technologies. From a services perspective, “digital” clients now have far greater choice of information resources, reading material, and format, more timely access, and the opportunity to manage their library service independently. The Canadian library community and the Canadian government, through the Library and Archives Canada, have endorsed the creation of a nationwide network of equitable library services for people with print disabilities. The CNIB, because of the implementation of the IDLS, is an integral part of this network.

A by-product of the library’s partnership with Microsoft Canada was an
international forum—Libraries for the Blind and Print-Disabled: Moving Toward a Digital Future, in Redmond, Washington, in 2004. This forum, sponsored by Microsoft, brought together executives from libraries for the blind around the world to discuss common standards for creating, storing, and sharing digital content in the context of a “Global Library for the Blind.” From this a number of cooperative international initiatives were established by these libraries to fulfill the aims of the global library.


Margaret McGrory, Vice President and CIO of CNIB and Executive Director of the CNIB Library, joined CNIB in 2002 with the primary objective to complete the digital transformation of the Library’s operations and services. Specifically, she implemented an Integrated Digital Library System encompassing a first-of-its-kind digital repository and e-delivery system integrated with the Library’s production management and library systems. Prior to CNIB, Margaret’s library experience included the Toronto Public Library and the Metropolitan Toronto Reference Library, latterly as Assistant Director. Her corporate experience includes Torstar Corporation, where she introduced e-business in Internet publishing, and more recently, Vice President of Corporate Information Systems at the Toronto Stock Exchange. Margaret is a member of the Board of the international DAISY Consortium and the IFLA/Libraries for the Blind Standing Committee. In 2005 she co-authored the IFLA publication Designing and Building Integrated Digital Library Systems—Guidelines.

Barbara Freeze is the National Director of the Project Management Office at CNIB. A former librarian, she directed a number of technology projects for the CNIB Library during her fifteen-year tenure there and was Program Director for the Digital project in 2002-03.

Margaret Williams is the Manager of Digital Library Portal Services and previously managed the Collection Department at the CNIB Library. Formerly, as Director of Information Resources at 2-1-1, a community information and referral service, she developed online directories and resources in English and French for job seekers, newcomers, and youth. She has also worked as an editor in scholarly and educational publishing.

Karen Taylor, Director of Production and Technical Services at the CNIB Library, is responsible for the acquisition and cataloging of material for CNIB Library as well as the production of braille, audio, and electronic text for CNIB and other institutions. Karen has participated in key initiatives relating to the development of accessible text and courseware through membership on the Council on Access to Information for Print Disabled Canadians; the National Information Standards Organization
(NISO); the Learning Opportunities Task Force, directing university programs to support advanced education of youth with learning disabilities; and SNOW (Special Needs Opportunities Window), providing online courses and resources for educators of students with special needs. Before joining CNIB, Karen developed system requirements for tracking compliance with charitable law in Ontario and was Library Product Manager for ISM, a division of IBM.
Index to Volume 55

SUSAN KELSCH

Page references in **boldface** indicate major treatment of a topic. Italic t, f, or n indicates information in tables, figures, or notes.

A
Abbeys, 653
‘Abd al-Karim Sa’id, 734
Abstracts, 925–926
Academic freedom. See Intellectual freedom
Academic libraries, 362
   Arizona State University West, 328
   Cornell University Geospatial Information Repository, 275–281
   critical incident technique research, 59
   librarian researchers, 137
   Low Memorial Library, Columbia University, 630
   “Man’s Right to Knowledge” display, 630
   National Geospatial Digital Archive, 305–312, 307f
   performance measurement, 107
   Princeton University Library Digital Map and Geospatial Information Center, 254, 256–262, 261f
   University of Wisconsin-Milwaukee, 236, 237–238, 249
   Yale University Library, 327–339
   Accelerate Project, 790

Access issues
   ACONDA (Activities Committee on New Directions, ALA), 684
   geographic information, 228, 244–245, 260, 278–279
   geospatial data, 218, 227, 238, 241, 256, 268, 274, 287
   meta-analysis, 168
   Prussian State Library music collection, 655, 657
   racial discrimination, 677
   Russian libraries, 723–724
   Siku Quanshu (ancient text), 393–394
   St. Louis Public Library, 461
   Tianyige Library, China, 423
   See also Online access
   Access to Libraries study (1963), 677
   Access to subjects (research methods), 17–18
   archivists study, 148
   observation methods, 180, 195–196
   Accessible formats
   availability, 917
   Canadian National Institute for the Blind, 975
cataloging, 920, 922–923
costs and funding, 824
DAISY standard, 939–940
Libraries for the Blind Section (IFLA), 866, 877–878
materials in Nigeria, 830–846
Notices of the American Library in Paris, 490–512
Aiken, Conrad, 592–593
Akioka Goro, 561–562
Al-Hidaya Library, Iraq, 740, 742
al-Majma’ al-Ilmi al-'Iraqi. See Iraqi Academy of Sciences
ALA Bulletin, 691
Alabama
desegregation, 665–666
Alstad, Colleen, 76
Alternative formats. See Accessible formats
Alternative text (Web sites), 961, 963
American Anthropological Association (AAA), 185
American Book Publishers Council, 638
American Council of Learned Societies (ACLS), 372
American Embassy, Paris, 498
American Expeditionary Forces, 491
American Foundation for the Blind (AFB), 799
American Geographical Society Library (AGSL), 236, 237–238, 245–248
American history, 591
American identity, 530–531
American Library Association (ALA)
American Library in Paris, 491–492
Carlton, W.N.L., 471
Franklin Book Programs, 638
Freedom to Read statement, 1954, 629
The Guidelines for Subject Access to Individual Works of Fiction, Drama, Etc., 924
intellectual freedom, 628–629
International Relations Office, 609–622
Library History Round Table, 364–365
New Directions committees, 675–697
San Diego library publicity, 574
visually impaired services survey, 799
American Library in Paris, 490–512
American Library of Nazi-Banned Books, 534
American Library of Nazi-Banned Books, 524–525, 528–532, 534
American National Standards Institute (ANSI), 938
American Printing House for the Blind (APH), 798
Americans living abroad, 491, 493–509
Americans with Disabilities Act (1990), 836
AMICUS (catalog), 986
ANACONDA (Ad Hoc Committee on New Directions, ALA), 691, 692–694
Anglo Nigeria Welfare Association for the Blind (ANWAB), 833
Animals, 880
Ankara, Turkey, 615–616
Ankem, K., 165–166
Annual Library Planning Guidelines (UK), 823
An Anthology of Famous English and American Poetry, 592–593
Anthropology, 179–180
Antiquities Law (Iraq, 1974), 744n
Antitrust issues, 912
Apartheid, 698–699, 702–703, 705, 709, 711n
Application development, 991
Applied discourse analysis, 69–70
Arabic language, 639
ArcGIS software, 317
Archaeology, 72
Archaeology of Knowledge (Foucault), 72
Architecture
   panopticons, 74
   St. Louis Public Library, 455
Archives
   accessible Web sites, 964–965
goearchiving, 219, 296–302
geospatial data, 274
Imperial Library, China, 406–407
Iraq War (2003–), 370–371
leadership and standards, 140, 145–155
National Geospatial Digital Archive, 305–312
See also Library and archive directors
ArcIMS standard, 255, 256
ArcSDE standard, 255, 256, 259–260
Argentati, Carolyn D., 352–353
Arizona State University West, 328
Arkansas
desegregation, 665
Armitage, Thomas Rhodes, 810
Arrest and imprisonment
   Chambrun, Clara Longworth de, 506
   Japanese Americans, 580–581
   Theresienstadt Ghetto, 513–515
Art museums. See Fine arts
Articles
   clipping services, 485
   Dervin, Brenda, 1
   Fidel, Raya, 4–5, 8
   journal submissions, 158–159
Arts organizations, 4, 10–20
Asheim, Lester, 613, 615, 616–617, 619–620
Asia Foundation, 615
Asian Americans, 580–581, 581n
Aspler, Tony, 982
Assassinations, 551–552
Asset management systems, 988
Assistive technology. See Adaptive technology
Association of Research Libraries, 108
Audio books. See Talking books
Audio recordings
   Columbia University bicentennial, 633
discourse analysis, 70
materials for visually impaired, 763, 797, 884, 887, 940, 982–983, 984
observation methods, 192
See also Talking books
Augean stables (mythology), 880
Australia
   copyright issues, 895, 896, 899
   online investors, 93–97, 99n
   visually impaired users, 791
Australian National Library, 438–439n
Austrian National Library, 533n
Authors and editors
   Aiken, Conrad, 592–593
   Aspler, Tony, 982
   Bradley, Phillips, 591
   Brierley, David, 926
   Browne, Lewis, 595n
content analysis research, 39
copyright issues, 888
Dante (Italian poet), 772
Douglas, Norman, 595n
   electronic journals, 34
   Fleming, Peter, 434, 436, 438n
   Geissman, Rudolf, 514
   Gowers, Ernest, 925
   Halt, R., 452n
   Keats, John, 589
   Kipling, Rudyard, 460
   Lerner, Max, 591
life histories, 131, 135
Lovesey, Peter, 926
Modern Library Series, 584
Nostradamus, 590
Plato, 589
Pound, Ezra, 592–593
Prisse d’Avesnes, Achille-Constant-Theodore Emile, 452n
Rowling, J.K., 922
Shakespeare, William, 590–591
Shelley, Percy Bysshe, 589
Snow, Edgar, 592
Stowe, Harriet Beecher, 534
Toqueville, Alexis de, 591
Truss, Lynne, 925
Wentworth, Patricia, 926
Whitman, Walt, 589–590
Ziervogel, Christian, 701, 702
Automation, preservation activities, 301
Availability of materials, 917
history, 881–882
research, 821–822
role of librarians, 780–781
user experiences, 760, 761, 766
Awards, 875–876
B
Babies and toddlers, 190–201
Bach, Johann Sebastian, 652, 654
Backup systems. See Data backup and storage
Baker, L.M., 175, 176
Balkan Wars (1990s), 363
Bankruptcy prediction, 165
Banned books
American Library in Paris, 500–501
Columbia University bicentennial, 627
South Africa, 709
See also Censorship and confiscation
Barbet de Jouy, J. Henri, 444
Barrett, P., 962
Base libraries (military), 578
Bates, M.J., 86
Battelle (company), 805
Bayt al-Hikma. See House of Wisdom, Iraq
BCKOnline project, 99n
Beech, Gould, 668
Beethoven, Ludwig von, 652, 654, 660
Behavior
babies and toddlers, 190–201
case studies research method, 6
International Relations Office (ALA), 616
See also Observation (research methods); User behavior
Beijing, China, 393
Belgium, 464–473
Benchmarking
evaluation research, 109
Web Accessibility Benchmarking, 958
Bencowitz, Isaac, 381–382
Bendix, Dorothy, 679
Benedictine order, 653
BenToWeb, 958
Berelson, B., 42n
Berlin, Germany, 651, 660
Berne Convention for the Protection of Literary and Artistic Works (1886), 893–894, 901–902
Berninghausen, David, 690
Berry, J., 960
Bertot, J.C., 106–107
Best practices, 788, 820, 871–872, 873
Beverley, C.A., 209–210
Bias. See Discrimination and prejudice; Objectivity; Openmindedness
Bible, 661
Bibliographers, 409
Bibliographic records, 918, 919–920, 922–923, 924–925, 929–930
See also Metadata
Bibliographies. See Catalogs and bibliographies
Biblioteka Jagiellonska. See Jagiellonian University Library
Biblioteka (Russian journal), 724–725
Bibliothèque des Enfants, Montreal, 601
Bibliothèque Nationale, France
American Library in Paris, 503
German Freedom Library, 527, 533n
Paris Commune of 1871, 442–453
Bibliotherapy, 203, 213–214
Bicentennial celebration, Columbia University, 623–637, 627
Biernacki, P., 182–183
Billington, James H., 753n
Bittar, Anys el, 448
Bivariate analysis, 160–161
Black-out precautions, 495–496
Blanesburg, Lord, 882–883
Blind and visually impaired users, 757–759
Canadian National Institute for the Blind, 973–993
copyright issues, 879–916
DAISY standard, 932–949
developing countries, 847–863
Libraries for the Blind Section (IFLA), 864–878
National Library Service for the Blind and Physically Handicapped, 796–808
Nigeria, 830–846
research, 785–795
resource discovery, 917–931
United Kingdom, 809–829
user experiences, 760–766, 767–784
Web sites, 950–972
Blind vs. sighted users
cataloging strategies, 919–929
copyright issues, 884
talking books, 941
user experiences, 782–783
Web sites, 873, 951–952
Blue Shield, International Community of (ICBS), 751–752
Bobby (validation tool), 964
Boni, Albert, 584
Bonteheuvel Public Library, 708–710, 713n
Book burnings
Nazi Germany, 363, 373, 523–535
University of Leuven, 373
See also Destruction, libraries and books
Book collecting. See Personal collections
Bookmobiles, 518–519
Books
American Library in Paris, 491, 496–497, 499
Austrian National Library, 533n
Bookshare.org, 900–901
Chinese book collecting, 404–420
donations, 860–861
first sale doctrine, 905
Franklin Book Programs, 640, 642–643, 644–647
Hanlin Academy, China, 431–441
Houston Public Library
desegregation, 670
intellectual freedom, 629
Iraq National Library and Archive, 733
Jewish owners, 381–382
L’Heure Joyeuse Brand Whitlock, Belgium, 468, 470, 471
materials for visually impaired, 798, 833, 854, 881, 884
military reading, 476, 537, 541, 542–543
Modern Library Series, 583–596
protection during war time, 376–377, 379, 380
San Diego, CA, 578
Siku Quanshu (ancient text), 387–392
Theresienstadt Ghetto Central Library, 513, 515–521, 518
Tianyige Library, China, 422–428
Victory Book Drive, 577
See also Banned books; Talking books
Books to Barracks campaign, 578
Bookshare.org, 881, 900–901, 909–910
Bores, Dorothée, 527
Borgman, Jim, 640
Boston, MA, 676
Bostwick, Arthur, 455–456
Bow, A., 86
Bowen, Carroll G., 639
Bowman, Frances Eunice, 459
Boxer Uprising (1900), 432–435, 438n
Bradley, Phillips, 591
Braille
cataloging techniques, 928–929
copyright issues, 884, 891
developing countries, 859–860
history, 810–811, 881–882
Indonesia, 857
National Library Service for the Blind and Physically Handicapped, 797–798
Nigeria, 831t, 833, 840, 841–842, 841f
Perkins Braille (equipment), 838
Philippines, 856
production techniques, 769–770, 887, 981–982
Standard English Braille, 799
Unified English Braille Code, 843
Web-Braille standard, 801–802
Braille, Louis, 797–798, 882
Branch libraries
Cape Town, South Africa, public libraries, 705–710
Colored Carnegie Library, Houston, 666, 669, 671–673
INDEX 999

San Diego Public Library, 577–578
St. Louis Public Library, 455
W.L.D. Johnson Sr. Branch, Houston, 673
Branders, Else, 539–540, 543, 543f
Breast cancer, 89–93, 99n
Breed, Clara, 580, 581n
Brief record displays, 930
Brierley, David, 926
British Ordnance Survey, 257
British Standards Institute (BSI), 969
Broadcasting, video, 778–779
BrookesTalk Web browser, 955
Brooklyn, NY
American Library of Nazi-Banned Books, 524–525, 528–532
Brooklyn Jewish Center Review, 528
Brooklyn Public Library, 47, 49–50
Browne, Lewis, 595n
Browsing and discovery
geospatial data, 287, 291, 292, 293
materials for visually impaired, 919
Brussels, Belgium, 464–473
Bryansk Region Research Library (BONUB), Russia, 717, 719–727
Bryant, Douglas W., 611, 613
Bundling information, 300
Burkina Faso, 858
Burson, Betsy, 689–690
Business and industry
online investors, 93–97, 99n
post-war, 480–482
public technical libraries, UK, 477–480, 485
research and development, 480–482, 488n
Business services, 724
Businessmen
Boni, Albert, 584
Bowen, Carroll G., 639
Cerf, Bennet, 584–585, 589, 593, 595n
Columbia University bicentennial, 625
Franklin Book Programs, 641
Gates, Bill, 948
Klopfer, Donald S., 584–585
Lacy, Dan, 641
Liveright, Horace, 584
Smart, Charles Allen, 595n
Thorpe, Frederick, 813
Buzek, Jerzy, 661
C
Cabinet Office (UK), 965, 968
Cairo, Egypt, 644
Calibre Cassette Library, 763, 813
California
Linda Vista, 577
San Diego Public Library, 570–582
Stanford University, 305, 307f
Call centers, 856
Cambodia, 363, 856
Camp Callan, CA, 578
Campbell Collaboration, 212–213
Camps (reading guidance), 565
Canada
Canadian National Institute for the Blind (CNIB), 789–790, 791, 873, 973–993
Community Information Centres, 77
copyright issues, 896–897, 898, 908, 914
Notre Dame de Grace Library for Boys and Girls, Montreal, 597–608
visually impaired users, 789–790, 791
Cancer, 89–93, 99n
Cape Cod, MA, 225
Cape Flats, Cape Town, South Africa, 698–715
Capitalism, 625
Captions, 899
Career development
childhood library experiences, 121–122
library mentoring, 356–357
Carey, R.F., 175, 176
Carlton, W.N.L., 471
Carnegie, Andrew, 666
Carrier information, 928–929
Carter, Lilly-Elizabeth, 465
Cartography, 299–300, 335
Cartoons, editorial, 640
Cascading map services, 293–294
Case, Donald, 8
Case, P., 175, 176
Case studies, 2, 4–21, 13f, 792, 872
Cassette tapes
duplication equipment, 985
talking books, 763, 764, 797, 800, 801, 803, 813, 884, 940, 982–983
Cataloging
geospatial data, 259
MARC AMC (Archival and Manuscript Control), 145
Cataloging (continued)
materials for visually impaired, 919–929, 930–931, 985–986
Theresienstadt Ghetto Central Library, 519
Catalogs and bibliographies
AMICUS, 986
collection guides, 231–232, 409–410
finding aids, 148–149
German Freedom Library, 527, 533
Imperial Library, China, 409–410, 417
Iraqi Academy of Sciences, 737–738
materials for visually impaired, 835, 840–842, 844, 854, 917–931
Ministry of Endowments and Religious Affairs Central Library, Iraq, 743
National Library Service for the Blind and Physically Handicapped, 800, 802
National Map Catalog, 293
National Union Catalogue of Alternative Formats, 816
Revealweb catalog, 763, 819, 822
standards development, 148
Unity System, UK, 816
Categorization
accessible format materials, 774–775
life histories, 130
research data analysis, 88
Catholicism
cultural sites protection, 375
Montreal, Canada, 601
CBS (Columbia Broadcasting System), 626
CD-ROMs, 229, 246
CDs (sound recordings)
duplication equipment, 986
talking books, 764, 765, 982–983
Censorship and confiscation
ACONDA (Activities Committee on New Directions, ALA), 683, 686–687
American Library in Paris, 500
Chinese texts, 416, 418
Columbia University bicentennial, 627
Imperial Library, China, 412–413
intellectual freedom, 629
Japan, 556
libraries for the blind, 866
Modern Library Series, 592–593
Nazi Germany, 523–535
Russian libraries, 718
San Diego Public Library, 579–580
Siku Quanshu (ancient text), 391
South Africa, 709
St. Louis Public Library, 459
Census information, 228–229
Cerf, Bennet, 584–585, 589, 593, 595
Certification, 967
Ceylon, 615
Chafee Amendment (1996), 801, 901, 902, 903
Chaldean Patriarchate, Iraq, 740, 742
Chambrun, Clara Longworth de, 490, 492, 493–494, 495–509, 511
Chambrun, René de, 503
Characters (fictional), 928
Charities. See Nonprofit organizations
Charmaz, K., 86
Chartered Institute of Library and Information Professionals (CILIP), 487, 762, 788, 816
Chat reference
critical incident technique research, 59
discourse analysis, 71
Chatman, Elfreda, 85–86, 177, 180, 185, 186
Check-in procedures, 977
Chen Menglei, 389
Chernobyl disaster (1986), 722
Child development
babies and toddlers, 191, 199
reading, 603, 606
Children
babies and toddlers, 190–201
Burkina Faso, 858
developing countries, 848, 850, 862
Nigeria, 830–831
observation studies, 175
vaccinations, 213
wartime reading, 366
World War I, 454–463
Children’s books
Franklin Book Programs, 647
L’Heure Joyeuse Brand Whitlock, Belgium, 471
Children’s libraries
Crooks, Grace, 605
Houston Public Library
segregation, 669–670
L’Heure Joyeuse Brand Whitlock, Belgium, 464–473
Notre Dame de Grace Library for Boys and Girls, Montreal, 597–608
San Diego Public Library, 580–581, 581 n
St. Louis Public Library, 456, 457–461, 462, 462 n
“The Children’s Song” (Kipling), 460
China
Hanlin Academy, China, 431–441
Imperial Library, 404–420
library history, 366
Siku Quanshu (ancient text), 387–403
Tianyige Library, 421–429
China National People’s Congress (CNPC), 398, 399
Chinese Political Consultative Conference (CPCC), 399
Christensen, Thomas Kjellberg, 941
Christian missionaries, 433
Christofel Blinden Mission (CBM), 851
Chronology
archival standards, 147, 152
longitudinal design, 142
CILIP. See Chartered Institute of Library and Information Professionals
Cincinnati Enquirer, 640
Circulation
American Library in Paris, 495, 500, 505–506
geographic information, 245–246, 249, 250
Houston Public Library, 670
Japanese libraries, 552
L’Heure Joyeuse Brand Whitlock, Belgium, 468–469
materials for visually impaired, 886, 902–903, 904, 945, 976, 977, 988–989
military hospitals, 542–543, 543 t
National Library Service for the Blind and Physically Handicapped, 797
San Diego Public Library, 574–575, 578, 579–580
Theresienstadt Ghetto Central Library, 517–518
City agencies. See Local government
Civil Rights Movement (U.S.), 666, 671
Civil service examinations, 408–409, 422
CLASP (Connecting Libraries and Schools Project), 46–64
Classification. See Categorization
Classrooms, 80
See also Schools
Clearinghouses
geospatial data, 232, 232 t
National Library Service for the Blind and Physically Handicapped, 801
New York State GIS Clearinghouse, 267
Clift, David, 613
Clinical librarian programmes, 208
Clipping services, 485
CNIB Digital Library and Children’s Discovery Portal (CDL), 977, 978 f
Coaching (mentoring), 356
Cochrane Collaboration, 212
Coding (language), 68
Coding (research methods)
archivists study, 153
content analysis, 24–26 t, 31–34, 35 t, 37–39, 40, 42 n
life histories, 130
Cold War
divided Germany, 531–532
understanding communism, 629
U.S. cultural diplomacy, 640
Colds (illness), 206
Collaboration. See Cooperation; Partnerships
Collection acquisition and purchasing
American intelligence, 377–378
Chinese public libraries, 400
geographic information, 321
Hanlin Academy, China, 435–436
Imperial Library, China, 407–412, 415
materials for visually impaired, 776
Russian libraries, 723
Collection development
accessible formats, 768–770, 775–776, 843–844, 979
American Library of Nazi-Banned Books, 528, 534 n
geospatial data, 218, 222–235, 231 t, 237, 272, 273 t, 279–280, 321, 337
Collection development (continued)
  German Freedom Library, 525
  Imperial Library, China, 416–417
  Japan, 560–561
  L’Heure Joyeuse Brand Whitlock, Belgium, 468
  military hospitals, 543–544
  National Geospatial Digital Archive, 309–312
  Russian libraries, 723–724
  San Diego Public Library, 578–579
  *Siku Quanshu* (ancient text), 389–391
  St. Louis Public Library, 457–458
  Theresienstadt Ghetto Central Library, 516, 517t, 520
  Tianyige Library, China, 424

Collection guides
  geographic information, 231–232
  Imperial Dynasty, China, 409–410

College courses  
  Columbia University, 634n
  geographic information skills, 247, 321

College students
  first-generation immigrants, 124–125
  information seeking, 144
  library workers, 261
  visually impaired, 839, 840

Collocation, 922

Color (graphics), 258

Colored Carnegie Library, Houston, 666, 669, 671–673

Columbia University, 623–637, 627

Commercial Press (Shang Wu Yin Shu Guan), 426, 429n

Common colds, 206

Communication
  active listening techniques, 128
  CLASP (Connecting Libraries and Schools Project), 57–58
  content analysis methods, 27, 28–29
  critical incident technique research, 59
  discourse analysis, 65–84
  financial information, 96–97
  geospatial data distribution, 268–269, 268f

  See also Non-verbal communication

Communism
  Chinese Communists, 395
  Columbia University, 624–626, 629
  Franklin Book Programs, 646
  McCarthyism, 531–532
  South African Communist Party, 712n

Community centers
  Brooklyn, NY, 530–531
  Russian libraries, 722

War Information Centers, 572

Woodlands Community Resource Centre, South Africa, 707

Community Information Centres (Canada), 77

Community involvement
  Montreal, Canada, 600
  Notre Dame de Grace Library for Boys and Girls, Montreal, 597–598, 602–603
  Russian libraries, 723
  services for visually impaired, 793
  St. Louis Public Library, 455
  Competition (business), 912
  *The Complete Library of Four Treasures, See Siku Quanshu* (Chinese text)
  *The Complete Plain Words* (Gowers), 925
  *Complete Poetical Works* (Keats and Shelley), 589

Compression (data), 229, 258, 259

Computer labs
  Russian libraries, 724
  University of Kansas Libraries, 316–317

Computer storage. See Data backup and storage

Concentration camps, 513–515

Conferences and seminars, 992
  ALA, Atlanta (1969), 680
  ALA, Chicago (1963), 680
  ALA, Detroit (1970), 689–692
  IFLA, Glasgow (2002), 866, 867–868
  Libraries for the Blind Section (IFLA), 872, 874, 876
  Microsoft Accessible Technology Group, 948
  Russian libraries, 853
  Share the Vision program, 822
  *Siku Quanshu* (ancient text), 399

Confidentiality
  geographic information, 244–245, 275
  observation studies, 185
Confirmability (research methods)
case studies, 7
content analysis, 38–39
Connecticut
Greenwich Public Library, 632
Yale University Library, 327–339
Consensus building, 16
Consent, observation studies, 175, 180, 194–195, 198
Conservatism
libraries in society, 475–476
South Africa, 704
Consortia
Accelerate Project, 790
DAISY Consortium, 875, 877, 932–933, 935–938, 946
Information and Telecommunication Needs Research, 791
Open Geospatial Consortium, 288–289
World Wide Web Consortium (W3C), 938–939, 941, 951
Constant comparative method, 13
Constitution, South Africa, 914n
Constitution, United States, 914n
Constructivist philosophical framework, 2, 83–101
Content analysis, 2, 22–45, 24–26t critical incident technique, 50–51
vs. discourse analysis, 75
Content Analysis in Communications Research (Berelson), 42n
Content Analysis News and Discussion List, 42
Content producers
geographic information, 227–228, 228t, 233, 238, 294
geospatial data, 268f, 276–277, 280, 321
materials for visually impaired, 780, 813, 896–897, 948
National Geospatial Digital Archive, 308–309, 311
partnerships with libraries, 267–268
See also Databases
Content warnings, 928
Contests
best practice awards, 875–876
digital talking book design, 804
Continuation War, Finland (1941–44), 541–543
Continuity, libraries, 362
Contracts
data-sharing agreements, 269–275, 275t
distribution agreements, 268–269, 276–277
licensing agreements, 218, 227, 236–253, 241–242, 244–246, 275, 885–886
National Geospatial Digital Archive, 308–309, 311
Convergence, 779–780
Conversation
discourse analysis, 67, 69–70
life histories, 127–128
Cook, D.J., 203–204
Cooperation
DAISY standard, 936–937
geospatial information standards, 294
researchers, 168
Cooperative agreements, 311
Copernicus Group, 661–662
Copying
Imperial Library, China, 417
Siku Quanshu (ancient text), 391
Copyright
materials for visually impaired, 770–772, 801, 824–825, 861–862, 874, 879–916, 945, 946, 979
National Geospatial Digital Archive, 308–309
Copyright, Designs and Patents Act (UK, 1988), 914n
Copyright Act (1976), 309, 895, 906
Copyright Act (Canada), 914n
Copyright Revision Act (1979), 240
Copyright (Visually Impaired Persons) Act (UK, 2002), 825, 894
Cornell University Geospatial Information Repository (CUGIR), 275–281
Cosmopolitanism, 750
Costs
evaluation research, 111–112
geospatial information, 227, 229, 242, 244, 353
Costs (continued)

Iraq War (2003-), 744n
Modern Library Series, 594
services for visually disabled, 761, 784n, 849, 886–887
Counselling services, 839
County agencies. See Local government
Courbet, Gustave, 444
Course in General Linguistics (de Saussure), 67

Court cases

Smith v. Allwright (1944), 666–667
Sweatt v. Painter (1950), 666–667

Court records, 407
Cowling, Agnes, 467
Craddock, Peter, 792, 814
Craven, J., 960
Creative expression (copyright law), 269–271
Credibility (research methods)
case studies, 7
content analysis, 38
Crime
embezzlement, 445–446
juvenile delinquency, 600
See also Robbery
Critical incident technique, 2, 46–64
Crooks, Grace, 605
CSDGM (Content Standard for Geospatial Metadata), 273–274
Cultural diplomacy, 638–650
Cultural heritage
American Library in Paris, 509
Chinese culture, 387–388, 389, 405, 426–427
Flemish language, 468
Hanlin Academy, China, 435–436, 437–438
Iraq War (2003-), 730–745
libraries’ role, 363
preservation, 746–755
protection of cultural sites, 375–376, 379, 380, 382
Prussian State Library music collection, 654–655, 660, 661
Tianyige Library, China, 421–429
World War II, 371
Cultural policy
Americans in WWII, 370–386
China, 397–398, 406–413
Community Information Centres (Canada), 77
Cultural Revolution (China), 396, 427
Curators
Stern, Guy, 533n
Curley, Arthur, 678, 694
Current information. See Updating content
Current Sociology (journal), 5–6
Curry, Ann, 76
Czech language, 516
Czech Republic
Jewish Museum of Prague, 520–521
Theresienstadt Ghetto, 514–521
D
DAISY Consortium, 875, 877, 932–933, 935–938, 946
DAISY for All project, 937–938
DAISY standard, 932–949
Libraries for the Blind Section (IFLA), 872, 877
talking books, 895, 977, 978f, 982, 984
user needs, 765, 766
user testing, 789–790
Dalton, Jack, 613, 615–616
Dante (Italian poet), 772
Danton, J. Periam, 495
Dar al-Kutub wa al-Watha’iq. See Iraq National Library and Archives
Dar al-Makhtutat al-’Iraqiya. See Iraqi House of Manuscripts
Data
archivists study, 153–154
constructivist research frameworks, 86
content analysis, 24–26t, 27–30, 30, 35t
life histories, 136–137
meta-analysis, 161

Data analysis
accessible format materials research, 836
case studies research method, 13–14
ethnographic techniques, 88
evaluation research, 116–117
information seeking research, 91
life histories, 129–130
systematic reviews, 212
Data backup and storage
flash-memory cards, 796, 804–805
geographic information systems,
262, 310
storage area networks (SAN), 989

Data collection, 1
archivists study, 148, 151–152
arts administrators study, 10–13
case studies, 8
critical incident technique, 48–50
ethnographic techniques, 87–88
evaluation research, 115, 116
information seeking research,
90–91, 94–95
library usage statistics, 331
life histories, 125–129
longitudinal design, 142–143
observation methods, 183–184,
191–192
systematic reviews, 211–212

Data elements dictionaries, 149

Data formats
ArcSDE, 259–260
geospatial data, 228, 229, 255,
298–299, 299
materials for blind and visually
impaired, 777, 782, 897, 939
National Geospatial Digital Archive,
306–308
TIFF, 258, 259
See also Accessible formats

Data portals. See Virtual libraries

Data providers. See Content producers

Data sharing
geospatial information, 265–267,
269–275, 270t, 271f
meta-analysis, 168

Database management software
(DBMS)
geographic information systems,
256, 257f
library usage statistics, 331
Microsoft Access, 836

Database of Abstracts of Reviews of
Effects (DARE), 213

Databases
geographic information, 240, 293,
299
health information, 204, 209–210,
212–213

Library and Information Science
Abstracts (LISA), 172

Library Literature, 172
PUMapData, 258
Russian libraries, 724
SpatialDirect software, 260
See also Catalogs and bibliographies

Dawes, S.S., 267
Day, Mark, 79
de Saussure, Ferdinand, 67–68
de Vattel, Emmerich, 750–751
Deaf persons, 898
Death and Co (Brierley), 926

Debate clubs
South Africa, 701–702, 711
St. Louis Public Library, 460, 462n
Decker, D., 231

Declaration on Human Rights (UN),
914n

Definitions
access to participants, 195
case studies, 5
circulation and distribution, 903
content analysis, 23–27
critical incident technique, 47
data sharing agreements, 269
developing countries, 847
discourse analysis, 67–68
evaluation research, 102–103, 105
government records, 242–243
Integrated Digital Library System,
974–975
libraries for the blind, 880
life histories, 123
longitudinal design, 140–142
materials for visually impaired, 774
mentors, 350, 356
meta-analysis, 158
morality, 747
observation methods, 173,
185–186
print disabilities, 934
print impairment, 849
quantitative content analysis, 30
research methods, 1, 787
risk (preservation issues), 310
social responsibility, 694
standards, 938
systematic reviews, 203–204
text in content analysis, 27–29
validity (content analysis), 31

Deir al-Aba al-Krimliyin. See Chaldean
Patriarchate, Iraq

Delisle, Leopold, 448, 451n
Democracy
American Library of Nazi-Banned Books, 530
cultural diplomacy, 640, 642
cultural heritage, 376, 383
Democracy in America (de Tocqueville), 591
geographic information, 239, 242
public libraries, 76–77, 676, 722
role of libraries, 450, 509–510, 684–685
vs. communism, 629–630

Demographics
blind and visually impaired, 864, 934
Cape Flats, Cape Town, South Africa, 699, 705
developing countries, 849
L’Heure Joyeuse Brand Whitlock, Belgium, 469–470
Nigeria, 830–831, 839–840
San Diego, CA, 570
Yale University, 330

Denmark
accessible format materials, 946
Danish National Library for the Blind, 943–945

Department for Culture, Media and Sport (DCMS, UK), 823, 824

Departments of Public Health, 203

Dependability (research methods)
case studies, 7
content analysis, 38

Depository Library of Local Histories, Tianyige Museum, 427–428
Dervin, Brenda, 1, 85, 86

Description, accessible materials, 777, 782

Descriptive cataloging. See Cataloging

Desegregation, 665–674

Design, research projects
case studies research method, 9–17, 13f, 19–20
content analysis, 32
critical incident technique, 47
evaluation research, 116
financial information seeking, 94–95
life histories, 124–126
longitudinal design, 2–3, 140–157
medical information seeking, 90–91
meta-analysis, 165, 167
observation methods, 180, 191–192, 198, 199
systematic reviews, 209–210

Design for All methods, 951, 953

DeSTRUCTION, libraries and books
Cape Town, South Africa, 711–712n
German Freedom Library, 527
Hanlin Academy, China, 431–441
Imperial Library, China, 405–406, 412–414, 416, 418
Iraq War (1993), 370–371
Iraq War (2003–), 730–745
Jewish private collections, 379–380
moral issues, 746, 747, 749, 752
national libraries, 363–364
Poland, 655
Siku Quanshu (ancient text), 392, 393
talking books, 764
Theresienstadt Ghetto Central Library, 518–519
Tianyige Library, China, 423–424, 426
University of Leuven, 373
World War II, 377, 380
See also Book burnings

Detachment, scientific, 178–179
The Detective Wore Silk Drawers (Lovesey), 926

Detroit, MI, 689–692

Deutsche Freiheitsbibliothek. See German Freedom Library

Developing countries
Franklin Book Programs, 639
services for visually impaired, 847–863, 870, 875–876, 937–938

Digital divide, 780–781, 788–789

Digital File Repository, 765–766

Digital libraries. See Virtual libraries

Digital Orthophoto Quarter-Quadrangles, 310

Digital rights management, 912, 945

Digital technology
digital libraries, 953–954
materials for visually impaired, 767–784, 796–797, 879, 891–911, 934, 935, 936–945, 947
talking books, 803–804, 805, 872–873, 976–991

Digitization
geospatial data, 233
Yong Le Da Dian (encyclopedia), 439n
Ding, S., 200
Diplomacy and diplomats
Food for Peace program, 646
Franklin Book Programs, 638–650
International Relations Office (ALA), 619
Prussian State Library music collection, 658–661
Whitlock, Brand, 466
Directive on Copyright (European Union), 912
Directory of Transcription Services: Braille, Tape, Moon and Large Print, 815
Disability Discrimination Act (UK, 1995), 815–816, 952
Disability Rights Commission (UK, DRC), 959, 965, 966–967
Disabled persons, 788, 796, 801, 850, 898, 914, 948, 952
See also Blind and visually impaired users
Discourse analysis, 2, 65–84
Discovery, materials
Canadian National Institute for the Blind, 977, 988
catalogs, 917–931
Danish National Library for the Blind, 944
intermediaries, 834
National Library Service for the Blind and Physically Handicapped, 802
navigation options, 774–775
Unity System, UK, 816
University of Ilorin, Nigeria, 839
Discrimination and prejudice
African Americans library services, 677–678
Houston Public Library segregation, 666–667, 669
Jews in WWII, 501
South Africa, 698–699, 702–703, 705, 709, 711
St. Louis Public Library, 462
Discussion groups, 701–702, 709, 711
Diseases, communicable, 520
Disengagement, 181
Disk space. See File size
Distributed computing. See Library networks
Distribution and delivery
geospatial data, 268–269, 276–277
materials for visually impaired, 806–807, 811–812, 872, 903, 904, 908, 909–911, 920, 941, 945, 948, 975–976
District Six, Cape Town, South Africa, 706
Diversity
Cape Flats, Cape Town, South Africa, 699
life histories, 123
pluralism, 749
St. Louis Public Library, 456, 462 n
Divine Comedy (Dante), 772
Dix, William, 681
Doctoral programs, 160
Doctors (medical), 166
Documentation, 229–230, 246
Doing research with children and young people (Fraser et. al.), 200
Doing research with children (Grieg and Taylor), 199
Donations
American Library in Paris, 491, 496–497
Books to Barracks campaign, 578
developing countries, 860–862
FORCE Foundation, 852, 857–858
Imperial Library, China, 408–412, 418
Victory Book Drive, 577
Dong Fang Tu Shu Guan (East Library), 429
Dorsey, L., 328
Doubleday, W.E., 482, 485
Douglas, Norman, 595 n
Douglas, R.M., 206
Downloading, 228
Drama (plays), 460
Dresden Gallery, Germany, 655
Duchac, Kenneth, 679, 680
Due process of law, 914
Duggan, L.J., 144
Dühring, Margit, 941
Duplication. See Copying
DUXBURY software, 981
DVDs, 229
Dyslexia, 946
E
E-Delivery System (CNIB Digital Library), 988
E-Learning, 969
East Library (Dong Fang Tu Shu Guan), 429n

Eats, Shoots and Leaves (Truss), 925

Ecological Information Center, Bryansk, Russia, 722

Economics
post-Soviet Russia, 720–721
post-war, 480–482, 484, 486

Editorial cartoons, 640

Editors. See Authors and editors

Education
blind and visually impaired, 810, 910, 952
children’s libraries, 602–603
developing countries, 848, 849–850, 862
Japan, 553–554, 556, 561
lifelong learning, 556, 947
Nigeria, 831, 831t, 839–840
public technical libraries, UK, 482, 483, 487n
South Africa, 703–704
study abroad, 610, 721
eEurope Action Plan, 953

Effect size, 160–161

Eisenhower, Dwight D., 371, 624, 629–630

Elderly
blind and visually impaired, 781
observation studies, 177, 180, 185

Electronic journals, 34, 39

Electronic lists
Content Analysis News and Discussion List, 42
quantitative content analysis, 31

Elgin Marbles, 746

Elites (leadership), 146

Embezzlement, 445–446

Embossed type, 798, 810–811, 838, 881

Emerson, R.M., 131

Emotions
Holocaust and cultural materials, 381–382
life histories, 128–129
military hospital reading, 544
observation methods, 181
student public library users, 52–56

Empathy, 128–129

ENABLED project, 966

Encyclopedias
Encyclopedia Britannica, 977
Grand Encyclopedia of Ancient and Modern Knowledge (Chinese text), 389
materials for visually impaired, 854
Siku Quanshu (Chinese text), 366, 387–401, 425
Yong Le Da Dian, 434–436, 439n
Yongle Encyclopedia, 391

English Americans, 458

English language
accessible format materials, 772
language learners, 496
St. Louis Public Library, 462n

Entertainment and recreation
online investing, 96–97
reading, 763, 764, 834–835, 923–924

Environment, users observed in, 3, 171–187

Environmental issues
Cape Flats, Cape Town, South Africa, 711n
Ecological Information Center, Bryansk, Russia, 722
New York information, 279–280
Theresienstadt Ghetto Central Library, 520

Tianyige Library, China, 424

Environmental Systems Research Institute (ESRI)
geographic systems design, 262
server software, 256

Epidemics, 460–461, 462n

Equality of service
blind and visually impaired users, 761, 884, 934
blind children, 862
Libraries for the Blind Section (IFLA), 864–865, 866, 867, 868

Errors, meta-analysis, 162, 163

Eskander, Saad, 365

ESRI Data & Maps, 231t

ESRI Geography Network, 289

ESRI shapefiles, 308

Essay contests, 602, 603–604

Ethics. See Moral and ethical issues

Ethnic groups, South Africa, 699

Ethnography, 83–101
observation methods, 171–172, 173
research methods, 2

Europe
Braille, 882
cultural sites, 372, 376
World War I, 457, 458
INDEX 1009

European Accessible Information Network, 911
European Commission, 824–825
European Internet Accessibility Observatory (EIAO), 958, 962, 967–968
European Union
Accelerate Project, 790
copyright issues, 898, 910–911, 912
rights of visually impaired, 771
TESTLAB Project, 790–791, 816
Web accessibility, 953, 958, 965, 968
Evacuations, 497–498, 651–652
Evaluation, library materials
accessible Web design, 958, 963–966
geospatial data, 230
Evaluation research, 2, 102–120
Evidence-based practices, 787
Excerpts, 899–900, 927
Exhibits and displays
District Six, Cape Town, South Africa, 706
Lentegeur Public Library, South Africa, 706
“Man’s Right to Knowledge,” 626–628, 627, 630–632, 634
Nazi burned books, 532–533
San Diego Public Library, 574
St. Louis Public Library, 457, 460
Experimental methods, 110
Expropriation (property), 893
F
Fahs, Charles Burton, 611, 612
Fair use (copyright issues), 240
Fan Qin, 422–424
Fay, Bernard, 503
Federal Depository Library Programs (FDLP), 254–255, 354, 354f, 355f
Federal Geographic Data Committee (FGDC), 273–274
Federal government
Cabinet Office (UK), 965, 968
China, 397, 398, 399, 433
Department for Culture, Media and Sport (UK), 823, 824
France, 499, 507, 510
geospatial data, 238, 266, 288–289
International Information Administration, 643
International Relations Office (ALA), 619
Japan, 557–560
New Deal, 1930s, 374
Nigeria, 831, 831t
services for visually impaired, 758, 799
Web sites, 953, 957
Fee-based services
American Library in Paris, 492
Florida International University GIS services, 343
Fengtian, China, 393
Fidel, Raya, 4–5, 8, 17
Field notes, 183–184, 192–194, 196–198
Fifteen Year War, Japan (1931-45), 551
Fifth Amendment, Constitution, 914
File size
geospatial data, 255, 258, 261–262
MODIS satellite data, 310
Films
Columbia University bicentennial, 633
Hanover Park Public Library, South Africa, 708
Finance
American Library in Paris, 491, 494, 495, 503–504, 510
Bibliothèque Nationale, France, 445–446
Chinese public libraries, 400
cost analysis, 111–112
Houston Public Library, 672
incentives, research projects, 48
Japanese libraries, 562
Modern Library Series, 588, 594
Notre Dame de Grace Library for Boys and Girls, Montreal, 604
Russian libraries, 720
See also Costs; Grants and funding
Financial information. See Business and industry
Finding aids, 148–149
See also Catalogs and bibliographies
Findings. See Reporting (research findings)
Fine arts
Dresden Gallery, Germany, 655
Louvre Museum, France, 444, 445, 447
Polish, 661
Finland
  Finnish Library Association, 538
  Finnish National Library
    Association, 545–546
  Finnish Red Cross, 539
  military hospitals, **536–550**
Finley, David, 374
Fire
  Hanlin Academy, China, 434
  Iraq National Library and Archive,
    732–733
  Ministry of Endowments and
    Religious Affairs Central Library,
    Iraq, 734–735
  Tianyige Library, China, 423–424
First-generation immigrants, 124–125
First sale doctrine, 905
Fisher, S., 58
Flanagan, J.C., 47
Flash-memory cards, 796, 804–805
FLASH technology, 963
Fleming, Peter, 434, 436, 438n
Flemish language, 468
Florida
  Florida International University,
    343–344, 347
  State University System of Florida,
    342
  University of Florida Library, 344–
    346, 347
Flowcharts, 247, 250
Floyd, M., 962
Focus groups
  medical information seeking, 90
  talking books, 806
Food for Peace program, 646
FORCE Foundation, 852–860, 862
Foreign policy. See Diplomacy and
  diplomats
Format registries, 306–308
Forms
  circulation, 246, 249
  consent, 195
  permissions, 909–910
Forsythe, D.E., 179
Fort Rosecrans, San Diego, CA, 578
Foucault, Michel, 72–76, 79, 80
France
  American Library in Paris, **490–512**
  Paris Commune of 1871, **442–453**
  World War I, 464
Franco-Prussian War, 1870, 443
Franklin Book Programs, **638–650**
Fraser, Ian Forbes, 508–509
Fraser, S., 200
FRBR (Functional Requirements for
  Bibliographic Records), 918, 922
Freedom to read
  blind and visually impaired users,
    770–771
  Freedom to Read Foundation
    (FRF), 686–687
  Freedom to Read statement (1954),
    629
  See also Right to access to information
French language, 468
  Bibliothèque des Enfants, Montreal,
    601
  materials for visually impaired, 859
Fretz, R.L., 131
Frohmann, Bernd, 73–74, 77–78
  *From Aligoté to Zinfandel* (Aspler), 982
Fruchterman, Jim, 909–910
Fuchs, Hermann, 493, 499–500, 504–
  505, 509, 511n
Fundraising. See Grants and funding
G
  Gainesville, TX, 701
  Gangsters, 708
  Gansu Province, China, 396–399
  Gaozong, Emperor, 411
  Gaps Model of Service Quality, 108
  Garon, Sheldon, 553
  Gates, Bill, 948
  Gateway Project, 826
  Gathering spaces, libraries
    public libraries, 454
    South Africa, **698–715**
    St. Louis Public Library, 461
  Gays and lesbians, 58–59
  Gazette (Montreal, Canada), 602
  Geac Advance System, 988–989
  Geissman, Rudolf, 514
  Gender issues
    children in libraries, 196, 469
    International Relations Office
      (ALA), 613
  Generalizability (research methods)
    case studies research method, 7
    observation methods, 187
    quantitative content analysis, 31
  Genieva, Ekaterina, 718–719
  Genocide, 749
Genre fiction, 544–545, 924, 928
Geo-hacking, 295–296
Geoarchiving. See Archives
Geographic information systems (GIS), 217–221, 232t, 315–326
acquisition, 320, 324, 353
collection development, 222–235, 231t, 273t
consultations, 327–339
data management policies, 264–284, 270t
distributed vs. centralized systems, 340–348
goarchiving, 285–303
legal issues, 236–253
mentoring, 349–360
online system design, 254–263, 261f
preservation, 304–314
training patrons, 329
Geography
Cape Flats, Cape Town, South Africa, 711n
Russia, 727n
Geography Markup Language (GML), 299
Geolytics, 228–229
German Americans, 457
German Freedom Library, 524–527, 531–532
German language
Bible, 661
literature, 526–527
St. Louis Public Library, 457, 459
German Library of Burned Books, 526, 533–534n
Germany
German culture, 526
post-World War II, 531
Prussian State Library music collection, 651–652, 653
soldiers’ homes, 540
World War I, 468, 476, 480–482
See also Nazi Germany
Ghetto, Theresienstadt, 513–515
Ghettozentralbücheret. See Theresienstadt
Ghetto Central Library
Gindiri Materials Centre for the Visually Handicapped (GMCVH), 833
Girls. See Gender issues
GIS and Public Data (Ralston), 231–232
GIS DATA Sources (Decker), 231
Given, L.M., 175
Glasgow, Scotland, 866
Glasgow Declaration (IFLA, 2002), 867–868
Glasnost (Russia), 718
Global GIS—Global Coverage DVD, 231t
Global virtual library. See Virtual libraries
Globalization, 933
Goal setting, 357
Godber, John, 814–815
Gold, R.L., 173–174, 176, 177
GOVDOC-L listserv, 354, 354f, 355f
Government documents
Imperial Library, China, 407
Kokutai no hongi (report), 560
War Information Centers, 571–572
Gowers, Ernest, 925
GPS (Global Positioning System) data, 335
Graduate School of Library and Information Science at the University of Illinois, 364–365, 367–368
Graduate students, 206–207
Gramophones, 812
Grand Encyclopedia of Ancient and Modern Knowledge (Chinese text), 389
Grants and funding
Canadian National Institute for the Blind, 975
FORCE Foundation, 852, 853, 858
Franklin Book Programs, 646
grant writing, 720
International Relations Office (ALA), 611, 613, 614, 620
Iraqi collections, 741
Japanese libraries, 562
National Digital Information Infrastructure and Preservation Program, 297, 305–306
National Endowment for the Humanities, 150
National Library Service for the Blind and Physically Handicapped, 797
Notre Dame de Grace Library for Boys and Girls, Montreal, 604
Russian libraries, 719, 720, 723–724, 727n
services for visually disabled, 761, 817, 826, 844, 850
Graphics and visual information
flowcharts, 250
digetsal data formats, 223–224
materials for visually impaired, 773,
777, 782, 783, 854, 899, 914n, 926
medical information seeking, 92
satellite images, 226–227	
tables (research findings), 39
tactile images, 854
thumbnail images, 260

Graue, M.E., 200
Gray literature, 210

Greece
blind and visually impaired users, 790
Parthenon, 746
Green, R., 29
Greenwich, CT, Public Library, 632

H
Hacking (computers), 295–296
The Hague, Netherlands, 852
Hague Convention (1954), 731, 743n,
750–751, 754n
Hahn, K., 34, 38
Haines, Helen, 629
Halt, R., 452n
Hamer, J.S., 58–59
Han Dynasty, China, 413–414
Hanlin Academy, China, 431–441
Hanoi, Vietnam, 856
Hanover Park Public Library, South Africa, 707–708

Hardware
audio recording equipment, 982–
983, 983, 984
donations, 861
duplication equipment, 985, 986
digetographic information services, 345, 353

Integrated Digital Library System,
materials for visually impaired,
779–780, 790, 838
Hare, R.M., 747–748, 750
Harris, M., 205, 606n
Harry Potter and the Chamber of Secrets
(Rowling), 922
Harvard Map Collection, 224–226, 227
Harvey, F., 266
Haug, J.D., 166
Hawthorne Effect, 20n
Haynes, R.B., 203–204
Hazeltine, Alice, 458

Health information
information seeking research,
89–93, 99n
meta-analysis research, 165–166
systematic reviews, 203, 204, 205,
206, 209–210, 214
World War II, 579

Health issues
sex workers, 175
Spanish Influenza (1918), 460–461,
462n
Theresienstadt Ghetto Central
Library, 520
Health science libraries, 163–164, 204,
351, 352
clinical librarian programmes, 208
San Diego, CA, 579
Hebrew language, 516, 517, 519
Heinzel, A., 144
Helsinki, Finland, 539, 542, 548
Hench, K., 328
Hercules (mythology), 879–880
Hiding, in libraries, 706
High school students, 457–458
Hinchliff, Bill, 692
Historical analysis, 143

History
American history books, 591
American Library in Paris, 491, 492
archival standards, 146, 148–151
Belgium, 464, 468
Boxer Uprising (1900), 432–435
British service to visually impaired,
810–813
case studies, 5–6
Chinese history, 387, 388, 392–393,
394–395, 404–405, 413, 421–422
content analysis, 22–23
critical incident technique, 58–59
cultural diplomacy, 640–641
cultural property protection, 750–751
desegregation, 665–666, 671
discourse analysis, 67–69
Finland, 537–538
Florida International University, 343
geographic information systems, 222–223, 285–286, 288
Hanlin Academy, China, 435–436
historical analysis, 361–362, 432
International Relations Office (ALA), 609
Iraqi House of Manuscripts, 735–736
Islamic history, 452n
Japan, 551–553
libraries for the blind, 881–882, 936, 976
Libraries for the Blind Section (IFLA), 869
life histories research method, 124
meta-analysis, 163–164
Modern Library Series, 584–585
National Library Service for the Blind and Physically Handicapped, 797–801, 802–803
observation research methods, 171–172
Paris Commune of 1871, 442–444, 451
Potsdam Conference (1945), 662n
Prussian State Library music collection, 652–653, 657
research in social sciences, 83–84
social responsibility, 676–679
South Africa, 698–699, 702–703, 711n, 712n
systematic reviews, 204–205
Theresienstadt Ghetto, 513–515
University of Florida Library, 344
Wisconsin land records, 243
World War I, 480–482, 483
World War II reparations, 655
See also Life histories; War, rebellions, and revolutions
Hitler, Adolph
Hjorland, B., 166
Ho Chi Minh City, Vietnam, 855
Hobbies, 97
Hochschule für die Wissenschaft des Judentums (library), 518
Hofheinz, Roy M., 668
Holcombe, Oscar, 667
Holdings records, 922
Holmes, Walter G., 881–882
Holocaust
  cultural materials ownership, 381
  Jewish cultural heritage, 532
  Theresienstadt Ghetto Central Library, 513–522
Holocaust Memorial Museum, 533n
Homogeneity, 162
Honecker, Erich, 657–658
Horiuchi Koson, 565–566
Hospital libraries, 536–550, 577
House of Wisdom, Iraq, 738–739, 742
Housing
  post-WWI, 488n
  San Diego projects, 577
Houston Public Library, TX, 665–674
Huang Zongxi, 424–425
Human rights, 867, 889–890, 914n, 935
HumanITy (UK charity), 820
Humidity, 424
Humor, 585
Hungler, B.P., 183–184
Hwang, M.I., 164–165
I
Identification numbers, user, 945
Ideologies, political
  ACONDA (Activities Committee on New Directions, ALA), 685
  fight against Nazism, 526–527, 531
  Franklin Book Programs, 640, 642
  libraries as battleground, 532, 698–715
  moral issues of preservation, 749–750
  Paris Commune of 1871, 450
  post-World War I, 486
  reading guidance in Japan, 551–569
  role of public libraries, 676–679
  Russian libraries, 716, 717, 726–727
  welfare state, 539
IFLA. See Libraries for the Blind Section (IFLA)
Illinois
  University of Illinois, 364–365, 367–368
Images. See Graphics and visual information.

Immigrants
  first generation, 124–125
  German Freedom Library, 526
  St. Louis Public Library, 456, 462

Immunizations, 213

Imperial Library, China, 404–420, 425–426

Importation (library materials), 900–909

Imposed queries, 71

Imprisonment. See Arrest and imprisonment.

Incentives, research projects, 48

Indexing
  accessible materials, 926–927, 984–985
  LIS research, 172–173

Individuality
  constructivist research frameworks, 85
  Japan, 564

Individuals with Disabilities Education Improvement Act (2004), 910

Indonesia, 857

Inflation, 594

Influenza epidemic (1918), 460–461, 462

Information and Telecommunication Needs Research (ITNR), 791

Information Center Service (ICS) libraries, 643–644

Information infrastructure, 361, 362, 852, 857, 987–991

Information load (meta-analysis), 165

Information needs. See User needs.

Information Now project, 789–790

Information organization, 378

Information-seeking behavior
  arts administrators, 10–20
  case studies research method, 4–21
  financial securities analysts, 8
  visually impaired users, 954, 960

Information-seeking research
  constructivist research frameworks, 85–86
  financial information, 93–97
  first-generation students, 125
  gays and lesbians, 58–59
  health information, 165–166
  medical information, 89–93, 99
  reference interviews, 70–72
  students, 144

Information system process
  innovations (ISPI), 145

Information technology
  copyright issues, 895–896
  DAISY standard, 932–949
  HumanITy (UK charity), 820
  materials for visually impaired, 758–759, 772, 778, 789–791, 879, 973–974
  talking books, 813, 986–987
  Web accessibility, 865, 951

Informed consent, 175, 194–195, 198

Informed populace. See Democracy.

Infrastructure. See Information infrastructure.

Infringement of copyright, 771, 883, 900, 905–906

Inheritance, 423

Insects, 520

Insiderness, 132–133

Institutional review boards (IRB)
  life histories research method, 137
  observation methods, 184–185

Instruction services, 220–221, 247, 321–323

Instructional materials, 910

Integrated Digital Library System (IDLS), 973–993

Intellectual freedom
  ACONDA (Activities Committee on New Directions, ALA), 683, 685, 686–687, 690
  Columbia University, 624–625
  librarians’ commitment to, 623, 628–629, 868

Intellectual property rights, 272
  See also Copyright.

Intelligence gathering (national security), 377–378

Inter-library loan, 819, 825, 886, 900–909, 979

Interdepartmental Committee for the Acquisition of Foreign Publications (IDC), 377–379

Interdependence (cultures), 750

Intermediate copies (digital files), 898–899, 914

International Community of the Blue Shield (ICBS), 751–752
Internment camps, 581–582, 581n
Interoperability, 288–294, 295
Interpersonal skills
  CLASP (Connecting Libraries and Schools Project), 57–58
  critical incident technique research, 59
  geographic information services, 334–338
Interpretivist tradition, 83–84, 98
Interviews
  archivists study, 152
  arts administrators study, 10–11, 13
  critical incident technique, 49, 59
  ethnographic techniques, 87–88
  financial information seeking, 94
  life histories, 122, 126–129
  medical information seeking, 90–91
  Russian libraries research, 727n
  visually impaired user research, 792
Investors, information seeking, 93–97, 99n
iPods, 765
Iran, 645, 647
Iraq National Library and Archives, 365, 368n, 732–733, 742
Iraq War (2003–), 370–371
Iraq National Library and Archive, 365
  libraries and archives, 730–745
Iraqi Academy of Sciences, 737–738, 742
Iraqi House of Manuscripts, 735–737, 742
Iraqi Jewish Archives, 739–740, 742
ISBN, 922–923
Islam and Muslims
  Islamic history, 452n
  Islamic Library in Cape Town, 701
  Qibla (political group), 708
  religious documents, 733–735
Isolationism, 610
Italy
  cultural sites protection, 374–375
  Italian language, 772
  National Library, 377
J
  Jacobs, John, 707–708
  Jadad, A.R., 213
  Jagiellonian University Library, 366, 651, 653–662
Jails and prisons, 74, 577
Jammers, Antonius, 660
Japan
  Japan Library Association (JLA), 554–556, 557, 561–564, 566
  Siku Quanshu (ancient text), 393, 394
  wartime libraries, 551–569, 552
Japanese Americans, 580–581, 581 n
Jast, Stanley, 484
JAVA Script, 963
JAWS (screen reader), 955
Jenkins, Christine, 598
Jews and Jewish culture
  American Library of Nazi-Banned Books, 528–531
  book burnings, 524
  German Freedom Library, 526
  Iraqi Jewish Archives, 739–740
  Jewish Americans, 525, 528–532
  Jewish Museum of Prague, 520–521
  and Nazi Germany, 379–380, 381, 501
  Theresienstadt Ghetto Central Library, 513–522
See also Holocaust
Jin Dynasty, China, 404, 410–411, 413
Jing Du, 415
Johnson, R.B., 185–186, 187
Jorgensen, D.L., 181, 184
Josey, E.J., 677
Journalists
  Lissagaray, P., 452 n
  Morrison, George E., 438 n
  Murrow, Edward R., 638–639
Journals and magazines
  ALA Bulletin, 691
  Biblioteka (Russia), 724–725
  Brooklyn Jewish Center Review, 528
  content analysis research, 34, 39
  copyright issues, 888
  Current Sociology, 5–6
  materials for visually impaired, 800
  STV News, 815
  submission guidelines, 158–159
  systematic reviews, 210–211
  Toshokan Zasshi, 558–559, 563–564, 565
See also Literature review
JP2 Image Server, 259
Julien, H., 144
Juvenile delinquency, 597, 599–600, 603
K
Kannila, Helle, 546–547
Kansas
  University of Kansas Libraries, 315–325, 325 n
Kant, Immanuel, 747, 753 n
Kantorowicz, Alfred, 525–526, 532 n
Keats, John, 589
Kellar, William Henry, 665, 666
Keller, Helen, 882
Keller, M., 200
Kelly, T., 811, 812
Kesling, K.L., 206
Keyboard access, 962–963
Khmer language, 856
Khmer Rouge, Cambodia, 363
King, M.P., 142
Kingsford Smith, D., 93
Kinikin, J., 328
Kipling, Rudyard, 460
Kirk, Grayson, 624–625
Kislovskaya, Galina, 726
Klopfers, Donald S., 584–585
Knitting, 460
Knowledge
  blind and visually impaired users, 782–783
  Chinese culture, 388
  discourse analysis, 72–75
  knowledge society, 933
  role of libraries, 623–637
Kokumin Seishin Soûdon (campaign), 560–561
Kokutai no hongi (report), 560
Kolbe, Vincent, 709
Korean War (1950–53), 395
Koskenheimo, Kerttu, 544
Krac, Poland, 366, 651, 653, 656
Krippendorff, K., 23–27, 34, 41, 42 n
Krzeszów, Poland, 653
Kuhlthau, Carol, 8–9, 144
Kunze, Horst, 656–657
Kuwait, 734
L
Lacy, Dan, 641
Lancaster, F.W., 112
Land records, 243
Landview, 231
Language
  blind vs. sighted users, 782–783
discourse analysis, 67–72
Franklin Book Programs, 639, 644–645
materials in native languages, 938
Nigeria, 843
World War I, 468
Larabee, R.V., 181
Large print materials
  copyright issues, 908
  history, 812–813
  production techniques, 769–770
Laval, Pierre, 501, 507
Law of Nations (de Vattel), 750–751
Leadership
  American Library in Paris, 495, 502
  archives, 140, 145–155
  Bibliothèque Nationale, France, 450
  Chinese cultural history, 389
  Franklin Book Programs, 641
  mentoring, 350
  social responsibility, 679–689
times of war and revolution, 372, 374, 382
Leaflets, 709
Learning organizations, 475
Leaves of Grass (Whitman), 589–590
Leckie, G.J., 175
Lectures
  Bennett Cerf, 585
  Bibliothèque Nationale, France, 450
  Columbia University bicentennial, 626, 633
  Librarian of Congress, 753
  World War I, 476
Legal information, 722
Legal issues
  Colored Carnegie Library, Houston, 671–672
copyright compliance, 885–886, 893–909
desegregation, 667, 670
Houston Public Library
  National Geospatial Digital Archive, 308–309
Prussian State Library music collection, 659
Prussian State Library music collection, 659
service for blind and visually impaired, 770–772
Legislation
  ACONDA (Activities Committee on New Directions, ALA), 683, 687–688
  Americans with Disabilities Act (1990), 836
  Antiquities Law (Iraq, 1974), 744
  Chafee Amendment (1996), 801
  China, 398
  Copyright, Designs and Patents Act (UK, 1988), 914
  Copyright Act, Section 108 (1976), 309
  copyright issues, 879, 893–909
  Copyright Revision Act (1979), 240
  Copyright (Visually Impaired Persons) Act (UK, 2002), 825
  Disability Discrimination Act (UK, 1995), 815–816
disabled persons' rights, 788, 952–953
geo-spatial information, 242–243
Individuals with Disabilities
  Education Improvement Act (2004), 910
  Japan, 557–558
  OMB Circular A-16 (1994), 240–241
  OMB Circular A-130 (1996), 266
  Paperwork Reduction Act, 266
  Rehabilitation Act (1973), 953
  services for visually impaired, 799, 828, 865
Leisure. See Entertainment and recreation
Lending rights, 905
Lenin Club, 702
Lentegeur Public Library, South Africa, 705–707
Lepman, Jella, 615–616
Lerner, Max, 591
Lesbians and gays, 58–59
Levinthal, Israel Herbert, 529–530
Lewis, V., 200
Lexicality (text), 777
L'Heure Joyeuse Brand Whitlock, Belgium, 464–473
Li Guang, 413
Liability
geographic information, 245, 272
Iraq War (2003–), 732
Liaoning Province, China, 396–399
Liberalism
ACONDA (Activities Committee on New Directions, ALA), 685
Columbia University, 625
role of libraries, 485–486
LibQUAL+ (survey), 108
Librarians
academic librarian-researchers, 137
ACONDA (Activities Committee on New Directions, ALA), 683, 688
Berninghausen, David, 690
Bibliothèque Nationale, France, 444, 448, 449
Branders, Else, 539–540, 543, 543
Bryant, Douglas W., 611, 613
Burson, Betsy, 689–690
CLASP (Connecting Libraries and Schools Project), 46, 52–56, 57–58, 60n
Clift, David, 613
critical incident technique research, 59
Dalton, Jack, 613, 615–616
Dix, William, 681
Fan Qin, 422–424
geographic information services, 318–319, 328–330, 331–338, 345
Gunter, Lillian, 701
Hinchliff, Bill, 692
hospital libraries, 539–540, 543–545
Imperial Library, China, 417
Jacobs, John, 707–708
Japan, 553, 558, 559
Jast, Stanley, 484
Josey, E.J., 677
Kolbe, Vincent, 709
Koskenheimo, Kerttu, 544
Ludington, Flora Belle, 613
materials for blind and visually impaired, 774, 775–776, 780–781
mentoring, 349–360
military hospitals, 542
Netchaeff, Boris, 505
observation studies, 175, 193–194, 197
public technical libraries, UK, 479, 481–482
reference interviews, 68, 69, 70–72, 81
San Diego Public Library, 575
St. Louis Public Library, 455
Starke, Käthe, 520–521
Sterling, Anita, 671
Swank, Raynard, 613
systematic reviews, 202–215
Librarianship
American Library in Paris, 491, 509
blind and visually impaired users, 758, 781, 785–786, 871–872, 873, 913
children’s libraries, 466, 467
developing countries, 861
evaluation research, 103–104
hospital libraries, 538, 544, 545–547, 548
intellectual freedom, 628–629, 633
International Federation of Library Associations, 867–868
International Relations Office (ALA), 614, 615, 619
Japan, 553–560, 561–566
life histories, 121–139
longitudinal design, 140
“Man’s Right to Knowledge” display, 631
mentoring, 350–352
public technical libraries, UK, 484–485, 486
Russia, 724–726
San Diego Public Library, 580
social responsibility, 675–697
Libraries for the blind and visually impaired, 757–759
Canadian National Institute for the Blind, 973–993
copyright issues, 879–916
Danish National Library for the Blind, 943–945
Libraries for the Blind Section (IFLA), 869–878
National Library for the Blind, 811
National Library Service for the Blind and Physically Handicapped, 796–808
Nigeria, 831

INDEX 1019

Russia, 853–855
Swedish Library of Talking Books and Braille, 936
worldwide, 865–867
Libraries for the Blind Section (IFLA), 864, 869–878
Libraries North West (UK), 819
Library administration and management
Bibliothèque Nationale, France, 444–446, 448–449
Bryansk Region Research Library (BONUB), Russia, 725–726
cost analysis, 111–112
discourse analysis, 79
evaluation research, 103–104, 109
Houston Public Library, 667–670
Imperial Library, China, 407–412
Japan, 554–555, 558, 559
L’Heure Joyeuse Brand Whitlock, Belgium, 472
libraries for the blind, 890
mentoring, 350, 351t, 356–359
military hospitals, 541
organizational effectiveness, 113
services for visually disabled, 823, 855
Siku Quanshu (ancient text), 400–401
Theresienstadt Ghetto Central Library, 515–520
Tianyige Library, China, 422–423, 427
University of Kansas T.R. Smith Map Collection, 316–317
Library and archive directors
Billington, James H., 753
Bostwick, Arthur, 455–456
Carter, Lilly-Elizabeth, 465
Chambrun, Clara Longworth de, 490, 492, 493–494, 495–509, 511
Delisle, Leopold, 451
Eskander, Saad, 365
Fay, Bernard, 503
Finley, David, 374
Fraser, Ian Forbes, 508–509
Fuchs, Hermann, 493, 499–500, 504–505, 509, 511
Genieva, Ekaterina, 718–719
Godber, John, 814–815
Griffiths, Caroline, 464
Guigard, Joannis, 447
Imperial Dynasty, China, 411–412
Jammars, Antonius, 660
Kanila, Helle, 546–547
Kantorowicz, Alfred, 525–526, 532
Kislovskaya, Galina, 726
Kunze, Horst, 656–657
L’Heure Joyeuse Brand Whitlock, Belgium, 466
Lord, Milton, 508
MacLeish, Archibald, 374, 376, 383
Matsumoto Kiichi, 557, 566
Naqshbandi, Osama, 736, 740
Otobe Senzaburo, 558
Plaister, Cornelia, 572–573
Reclus, Elie, 446–451
Reeder, Dorothy, 490, 493, 494–502, 509, 511
Reynolds, Harriet, 667–668, 669, 670, 672
Shibuya Kunitada, 564
Stevenson, Burton, 491
Taschereau, Jules, 443
Travillian, Maurice, 692
Utitz, Emil, 515, 520–521
Valrey, Douglas, 703
Vincent, Jules, 442, 444–446
Zaitsev, Vladimir, 720, 726
Library and Archives Canada, 986
Library and Information Commission (LIC, UK), 817
Library and Information Science Abstracts (LISA), 172
Library and information science education
Japan, 565
research replication, 160
study abroad, 610
Library and information science research
Access to Libraries study (1963), 677
case studies, 8–9
consultation services, 328
Library and information science research (continued)
content analysis, 22–42, 24–26

critical incident technique, 58–60
discourse analysis, 73–74, 76–78, 79
evaluation research, 103–104, 113
hospital libraries, 538–539
International Relations Office (ALA), 618
longitudinal design, 143–145
meta-analysis, 158–170
observation methods, 172–179
Public Library Inquiry, 676
reference interviews, 70–72
Russian libraries, 727
services for visually impaired, 785–795, 799, 815, 820–821, 830, 834–840, 841, 858, 871–872
systematic reviews, 205–213
Web accessibility, 959, 960–963, 964–969
Library and Information Services for Visually Impaired People: National Guidelines, 816
Library and Information Statistics Unit, Loughborough University, UK, 792, 820, 821
Library Association (UK). See Chartered Institute of Library and Information Professionals (CILIP)
Library Bill of Rights, 628, 679
Library boards and oversight committees
German Freedom Library, 525–526
Houston Public Library, 667–670, 672
Libraries for the Blind Section (IFLA), 870
Notre Dame de Grace Library for Boys and Girls, Montreal, 605
Public Library of the City of Boston, 676
Share the Vision program, 815, 817
University of Florida, 345
Library buildings and space
American Library in Paris, 494
Bookshare.org, 881
Cape Town, South Africa, public libraries, 705–710
Colored Carnegie Library, Houston, 669, 671, 673
House of Wisdom, Iraq, 738
Iraqi House of Manuscripts, 735
L’Heure Joyeuse Brand Whitlock, Belgium, 465–466
locating libraries, 341
Notre Dame de Grace Library for Boys and Girls, Montreal, 604
San Diego Public Library, 570–571
Siku Quanshu (ancient text), 392, 398–399, 425–426
St. Louis Public Library, 455
Theresienstadt Ghetto Central Library, 520
Tianyige Library, China, 423–424, 426–427, 429
University of Kansas Libraries, 316, 317
Library cards
Houston Public Library, 670
Theresienstadt Ghetto Central Library, 519
Library closures
Colored Carnegie Library, Houston, 673
Russia, 720–721
St. Louis Public Library, 461
Library culture, 132–133
Library displays. See Exhibits and displays
Library hours, 575
Library Literature (database), 172
Library metrics
evaluation research, 105–107, 115–117
geographic information services, 294
Library networks
geographic information systems, 340–348
system design, 262
Library of Burned Books. See German Freedom Library
Library of Congress
intelligence-gathering collections, 378
lectures, 753
MARC AMC (Archival and Manuscript Control), 149
See also National Digital Information Infrastructure and Preservation Program (NDIIPP); National Library Service for the Blind and Physically Handicapped (NLS)

Library policies
- collection development, 224–226, 230, 311–312
- geographic information systems, 264–284, 270t, 271t
- Houston Public Library segregation, 669
- Japan, 559
- San Diego Public Library, 575
- Siku Quanshu (ancient text), 393–394
- Tianyige Library, China, 422–423

Library processes
- evaluation research, 108–109
- geographic information, 247, 250
- information system process innovations, 145
- map scanning, 258–260
- restoration of cultural materials, 381
- Library records, 246

Library Services for Visually Impaired People: A Manual of Best Practice, 820

Library staff
- American Library in Paris, 497–498, 502
- Bibliothèque Nationale, France, 448, 449
- CLASP (Connecting Libraries and Schools Project), 57
- geographic information services, 353, 354–355
- Iraqi libraries and archives, 731
- Russia, 727n
- services for visually disabled, 762

Library Web sites, 964–965

Libricide, 749

Licensing agreements
- accessible materials, 883–888, 896, 909–910, 945
- geospatial data, 218, 227, 236–253, 241–242, 244–246, 275, 294
- National Geospatial Digital Archive, 308–309

Life histories, 2, 121–139

Lifelong learning, 556, 947

Lin, J.W., 164–165

Lincoln, Y.S., 38

Linda Vista, CA, 577

Linguistics, 65–69

Linked works, 927

Lissagaray, P., 452n

Listening techniques, 128

Listservs, 233, 354f, 355f

Literacy
- blind and visually impaired users, 933–934
- developing countries, 848, 862
- functionally illiterate, 947
- L’Heure Joyeuse Brand Whitlock, Belgium, 469
- Nigeria, 842–843
- South Africa, 700, 706

Literal replication, 11, 15

Literature
- accessible format materials, 768–769, 837t, 923–924, 928
- Columbia University curriculum, 634n
- German, 526–527
- hospital reading, 543, 544–545
- Jewish, 516, 517t, 519
- Modern Library Series, 584–585, 589–593

Literature review
- library mentoring, 350–351
- longitudinal design, 144–145
- meta-analyses, 163–166
- observation methods, 172–173, 180
- systematic reviews, 202–215
- visually impaired users, 960

Little Rock, AK, 665

Liveright, Horace, 584

Living with Uncertainty (textbook), 926

Lobbying, 687–688, 874

Local government
- Bryansk, Russia, 719
- geospatial data, 229, 232, 238, 242, 244, 247–248, 266, 288–289, 297, 301
- Imperial Library, China, 411–412
- Japan, 553
- municipal libraries, Finland, 546
- San Diego, CA, 570–571
- Tianyige Library, China, 422

Local information
- Bryansk Region Research Library (BONUB), Russia, 721–722
- geospatial data, 336
- Tianyige Library, China, 429n

Logs, observation, 183–184
London, England, 533
Longitudinal design, 2, 140–157
Loquendo (software), 984
Lord, Milton, 508
Lotta Svärd (organization), 542
Loughborough University, UK, 792, 820, 821
Louvre Museum, France, 444, 445, 447
Lovesey, Peter, 926
Low Memorial Library, Columbia University, 630
Ludington, Flora Belle, 613
Lyytinen, K., 145
M
Machell, Jean, 816
MacLeish, Archibald, 374, 376, 383
Magazines. See Journals and magazines
Magnification, 777
Mail, 797
Maintenance of library materials
playback equipment, 801
talking books, 764
Make Haste Slowly: Moderates, Conservatives, and Social Desegregation in Houston (Kellar), 665
Maktabat al-Awqaf al-Markaziyya. See Ministry of Endowments and Religious Affairs Central Library, Iraq
Maktabat al-Hidaya. See Al-Hidaya Library, Iraq
Mali, 858
Management. See Library administration and management
Manaszewicz, R., 90
Manchester, UK, Public Library, 477
Manchuria, China, 392–393, 394–395
Manufacturing, 480–482
Manuscripts
Iraqi collections, 734–737, 738
Prussian State Library music collection, 652, 660–661, 662
Maps (paper)
browsing, 291
conversion to digital, 233
history of libraries, 285–286, 288
preserving cartography, 299–300
scanning, 257–258
topographic, 290
T.R. Smith Map Collection, University of Kansas, 319
user needs, 224–225, 225
Yale Map Collection, 330–331, 335
MARC 21 Bibliographic Format, 921–923, 924–929
MARC AMC (Archival and Manuscript Control), 141, 145–155
Marketing and publicity
accessible Web design, 952, 966–967
Columbia University bicentennial, 625, 633–634
geospatial data, 287
Houston Public Library, 670, 671
Libraries for the Blind Section (IFLA), 877
“Man’s Right to Knowledge” display, 631–633
Notre Dame de Grace Library for Boys and Girls, Montreal, 602
San Diego Public Library, 572–574
Share the Vision program, 815, 821, 822
Markup languages
Geography Markup Language (GML), 299
XML, 941
Martha’s Vineyard, MA, 225
Maryland
University of Maryland, 357–359
Mashups, Web, 295–296
Mason, Anna, 457, 459
Mass media, 375
Massachusetts
Harvard Map Collection, 224–226, 227
maps, 225
Public Library of the City of Boston, 676
Matrices (research findings), 153, 154
Matsumoto Kiichi, 557, 566
Matsuo, Tomoo, 558–559
Matthews, J.R., 107, 112
Mayring, P., 27
McCarthyism, 531, 624–625, 629, 643–644
McCure, C.R., 106–107
McCormick, B.G., 341
McKechnie, L., 175
McPike, Josephine, 456
Meaning
financial information, 93–94
health information, 90
Medical information. See Health information

Meetings
American Library Association, 679, 689–692
hospital libraries, 546
Houston Public Library board, 668–670, 672
Libraries for the Blind Section (IFLA), 875
library mentors, 357–358
See also Gathering spaces, libraries
Mellon, Andrew, 374
Memos, 37–38
Mentoring, 220–221, 349–360, 351–360
Merens, R.A., 164
Mergers (corporate), 888
Messages and messaging
chat reference, 71–72
content analysis, 28–29, 31
Meta-analysis, 3, 158–170, 212
Metadata
alternative text (Web sites), 961, 963
materials for visually impaired, 775, 835–836, 918, 919–929
Michigan
ALA conference (1970), 689–692
University of Michigan, 676
Microfilm, 378
Microsoft Access, 258–259, 331, 836
Microsoft Accessible Technology Group (ATG), 948
Microsoft Canada, 991–992
Microsoft Commerce Server, 988
Middle East
Franklin Book Programs, 639, 642, 644, 647, 648
history, 640–641
Military activities
American Library in Paris, 507–508
camp libraries, 491
China-Soviet border, 395–396
Eisenhower, Dwight D., 371
Iraq War (2003–), 731, 743n
Japan, 551–552
library staff enlistment, 459
manufacturing, 480–482
National Library, Italy, 377
protection of cultural sites and materials, 372, 375–376, 380–381
reading, 476, 496–497, 499, 578
San Diego, CA, 570
South Africa, 704
Military hospitals, 536–550
Mills, E., 213
Minister of Culture, Russia, 719
Ministry of Culture, China, 397
Ministry of Endowments and Religious Affairs Central Library, Iraq, 733–735, 742
Mirhadi, Tooran, 647
Mission and goals
American Library in Paris, 490–491, 495
American Library of Nazi-Banned Books, 528, 529
DAISY Consortium, 937
DAISY for All project, 938
Florida International University GIS services, 343–344
Franklin Book Programs, 641–642
genetic information, 293
information seeking, 13, 15–16
Integrated Digital Library System, 974
International Federation of Library Associations, 867
International Relations Office (ALA), 611–612, 614, 618, 619–620
L’Heure Joyeuse Brand Whitlock, Belgium, 467
Libraries for the Blind Section (IFLA), 869, 870
National Geospatial Digital Archive, 309–310
public libraries, 76, 475
Public Library of the City of Boston, 676
public technical libraries, UK, 484
Round Table for Social Responsibilities in Libraries (ALA), 679–680
Russian libraries, 717–718
Share the Vision program, 814–815, 818–819, 826–828
University of Florida Library, 346
Missionaries, 433
Missouri  
St. Louis Public Library, 455–462
Mitchell’s Plain, South Africa, 705
Mobility, 960
Models  
delivery of library materials, 806–807, 975–976
Gaps Model of Service Quality, 108
geographic information services, 341–342, 343–347
librarianship for visually impaired, 758, 877
Modern Library Series, 583–596, 588
Modernism, 584
MODIS satellites, 310
Molar and molecular observation, 182
Montreal, Canada  
Montreal Children’s Library, 601, 605
Notre Dame de Grace Library for Boys and Girls, Montreal, 597–608
Monumental preservation, 746–755
Monuments, Fine Arts, and Archives section, Allied Command, 372, 380, 381
Moon type standard, 764, 798, 810–811
Moore, Annie Carroll, 465
Moral and ethical issues  
developing countries, 849–850
life histories research method, 133
observation methods, 181, 184–185
preservation, 746–755
protection of cultural sites, 382
Morrison, George E., 438
Mozart, Wolfgang Amadeus, 652, 654, 662
MP3 files, 765
Mulrow, C.D., 203–204
Multiculturalism. See Diversity
Multimedia  
materials for blind and visually impaired, 778, 941
observation methods, 184
public technical libraries, UK, 485
Multimedia authoring software, 939–940
Multiple-case studies design. See Case studies
Munde, Gail, 350
Municipalities. See Local government
Murphy, Sarah Anne, 71
Murrow, Edward R., 638–639
Museums  
accessible Web sites, 964–965
administrator information seeking, 10–20
Iraq War (2003–), 370–371
Louvre Museum, France, 444, 445, 447
National Gallery of Art, 374
Tianyige Library, China, 426–428
Music collections, 651–664, 800, 921
Musicians  
Bach, Johann Sebastian, 652, 654
Beethoven, Ludwig von, 652, 654, 660
Mozart, Wolfgang Amadeus, 652, 654, 662
Prokofiev, Sergey, 921
Muslims. See Islam and Muslims
Mustonen-Ollila, E., 145
Mystery fiction, 926
Mythology, 879–880
N  
NAACP (National Association for the Advancement of Colored People), 667
Nagano, Japan, 558
Nantucket, MA, 225
Naqshbandi, Osama, 736, 740
Narrative reviews, 203
Narrators (talking books), 887
National Archives and Records Administration (NARA), 739–740
National Database of Resources in Accessible Formats. See Revealweb database
National Endowment for the Humanities (NEH), 150
National File Format (NFF), 939
National Gallery of Art, 374
National Geospatial Digital Archive (NGDA), 305–312, 307f
National Guard, 666
National Historical Public Records Commission (NHPRC), 150
National Information Standards Organization (NISO)
  DAISY standard, 938
digital talking books, 803–804
National Information Systems Task Force (NISTF), 149
National libraries
  Australian National Library, 438–439
  Austrian National Library, 533
  Bibliothèque Nationale, France, 442–453, 527, 533
  Danish National Library for the Blind, 943–945
  Iraq National Library and Archive, 365, 732–733, 742
  libraries and societies, 362
  Library and Archives Canada, 986
  National Library, Italy, 377
  National Library, Vietnam, 856
  National Library for the Blind, UK, 811
  National Library of Nigeria, 842, 844
  National Library of Russia, 720
  National Science Library, Vietnam, 855–856
  Prussian State Library, 366
  Siku Quanshu (ancient text), 389–390
See also Imperial Library, China
National Library Service for the Blind and Physically Handicapped (NLS), 796–808, 900, 902
National Map Catalog, 293
National Party (South Africa), 711
National Public Radio (NPR), 638–639
National Research Council, 239
National Science Library, Vietnam, 855–856
National security
  geographic information, 245, 274, 278–279, 310–311
  intelligence gathering, 377–378
  World War II, 579–580
National Spatial Data Infrastructure (NSDI), 240–241
National Spiritual Mobilization Movement (Japan), 560–561
National Transportation Atlas Database, 231
National Union Catalogue of Alternative Formats (NUCAF), 816, 917–918
Nationalism
  France, 443
  Japan, 560–561
  moral issues of preservation, 749
Nationalist Chinese government, 395
Natural disasters, 752
Natural resources information, 279–280
Navigation
  accessible format materials catalogs, 930
  accessible Web sites, 961, 962–963
talking books, 805–806, 897, 936, 940, 941–942, 943
Nazi Germany
  American Library in Paris, 497, 499–509, 510
  book burnings, 363, 373, 523–535
  and Finland, 537
  hiding cultural treasures, 379
  history of, 380–381
  Prussian State Library music collection, 652, 655
  Theresienstadt Ghetto, 514–521
NC OneMap Initiative, 289, 297
NCX (Navigation Control File for XML Applications) files, 941–942
Needs assessment, 226
Negotiations
  Houston Public Library desegregation, 667–668
  Prussia State Library music collection, 656–662
Netchaeff, Boris, 505
Netherlands, 852–860
Network (interpersonal) analysis, 153
Networking (professional development)
  International Relations Office (ALA), 615
  library mentors, 358–359
Networks, library
  South Africa, 700
St. Louis Public Library, 457
New Deal, 1930s, 374
New Jersey
Princeton University Library Digital Map and Geospatial Information Center, 254, 256–262, 261f

New York
American Library of Nazi-Banned Books, 524–525
Cornell University Geospatial Information Repository, 275–281
The New York Public Library children’s rooms, 465–466
CLASP (Connecting Libraries and Schools Project), 46–59
Uncle Tom’s Cabin (Stowe), 534n

New York State GIS Clearinghouse, 267
The New York Times, 365, 368n
The New York Times Magazine, 625
Newsletters, 876

Newspapers
accessible formats, 987
Cincinnati Enquirer, 640
copyright issues, 888
Gazette (Montreal, Canada), 602
“Man’s Right to Knowledge” display, 631–632
Monitor (Montreal), 599–600, 602
The New York Times, 365, 368n
The New York Times Magazine, 625
San Diego Union, 573

Nielsen Norman study, 961
Nigeria, 830–846
Nigeria Society for the Blind, 833
Nigerwives Braille Production Centre, 833

Nitecki, D.A., 29
Nohrström, Kyllikki, 538–539
Non-European Unity Movement, 702, 712n

Nonverbal communication
observation studies, 196
reference interviews, 71–72

Nonfiction
accessible formats, 768–769, 837t
best sellers, 586
Modern Library Series, 589, 590, 591
Random House, 585

Nongovernmental organizations
(NGO), 831, 833

Nonprofit organizations
American Foundation for the Blind, 799
American Library in Paris, 491, 492
Bookshare.org, 881, 909–910
Calibre Cassette Library, 763, 813
Canadian National Institute for the Blind, 975
copyright issues, 901
FORCE Foundation, 850–860
Franklin Book Programs, 638
HumanITy (UK charity), 820
Nigeria, 833
Rockefeller Foundation, 611, 613–614, 617, 618
Royal National Institute of the Blind, 810, 812
service for blind and visually impaired, 770–771, 772, 811, 851, 874, 882–883

North Carolina Geospatial Data Archiving Project, 298–301, 305
North Carolina State University geographic information services, 352–353
NC OneMap Initiative, 289, 297
Northeast Arc Users Group (NEARC), 232

Nostradamus, 590
Notre Dame de Grace Library for Boys and Girls, Montreal, 597–608

NOVA project, 789, 961
NPR (National Public Radio), 638–639
Nurses, 539–540

O
Objectionable content, 928

Objectivity
discourse analysis, 74–75
life histories, 134–135
meta-analysis, 161–162
systematic reviews, 202, 207, 210–211

Observation (research methods), 3, 171–189, 190–201
case studies research method, 6, 19
ethnographic techniques, 87, 88
systematic reviews, 202

Observing children in their natural worlds: A methodological primer (Pellegrini), 200

Offenbach Archival Depot, 381
Office of Civilian Defense, 571
Office of Government Reports, 571
Office of Management and Budget (OMB)
INDEX 1027

OMB Circular A-16 (1994), 240–241
OMB Circular A-130 (1996), 266
Office of Strategic Services (OSS), 377–378
Office of War Information, 523, 524
Ondrusek, A.L., 205–206
Online access
archives, 149
geographic information, 228
Online collections. See Virtual libraries
Online investors, 93–97, 99n
Online reference, 71–72
OPACs (Online public access catalogs), 921
Open formats
talking books, 764–765
Open Geospatial Consortium (OGC), 288–289
Open Society Institute, 727n
Open systems, 295
Openmindedness, 15, 19
Opinion leaders. See Leadership
Oppenheimer, Robert, 633
The Oracles of Nostradamus, 590
Oral tradition, 709, 711
Orchestras. See Arts organizations
Organizational effectiveness, 113
Organizations
children’s library services, 599
Japan, 553
Lotta Svärd, 542
Nigeria, 831t
San Diego community, 576
services to visually impaired, 856, 880, 957
See also Nonprofit organizations; Professional associations
Organized crime, 708
Oskam, S., 267
Otobe Senzaburo, 558
Oulton, T., 58
Outreach, library services
Bryansk Region Research Library (BONUB), Russia, 719–720
geographic information, 322–323, 334
geospatial data, 287
San Diego Public Library, 572–574
St. Louis Public Library, 456, 458–459
Overdue books, 579
Ownership
borrowed materials, 903
Colored Carnegie Library, Houston, 671–672
copyright, 893
Iraqi House of Manuscripts, 735
post-World War II, 381
Prussian State Library music collection, 654–655, 659
Siku Quanshu (ancient text), 395–396, 398–399
Ozkaramanli, E., 59

P
Pacifism, 410–411, 412
Page layout, 777, 899
Panopticons, 74
Paper, 586–588, 591, 593
Paperwork Reduction Act, 266
Parents, 193–198
Paris, France
American Library in Paris, 490–512
German Freedom Library, 524–527
Paris Commune of 1871, 442–453
Parsing (text), 777
Parthenon, Greece, 746
Participants, research methods
access to, 17–18
archivists study, 148, 151–152
bias, 19
critical incident technique, 48
life histories, 125–126, 132
Partiinost (Russia), 718
Partnerships
academic libraries, 228
charitable organizations, 852–853
geographic information, 265–275
libraries, 860–862, 874, 875
libraries and businesses, 991–992
libraries and data producers, 218–219, 232
libraries and faculty, 247, 321, 323–324
libraries and organizations, 841, 857
libraries and publishers, 854–855
libraries and schools, 459
libraries for visually impaired, 814–815, 821
National Geospatial Digital Archive, 312
Planning
- American military, 371
- blind and visually impaired services, 858
- critical incident technique, 47
- evaluation research, 104, 114
- life histories, 127
- research, 206
- systematic reviews, 207
- times of war and revolution, 372

Plato, 589

Playback equipment
- copyright issues, 884, 885
- National Library Service for the Blind and Physically Handicapped, 799–800, 801, 803, 804, 805–806
- playback options, 940–941, 943
- purchase vs. loan, 978
- user experiences, 763, 764–765

Plays (drama), 460

Pluralism, 749

Poetry
- Kipling, Rudyard, 460
- Modern Library Series, 589–590, 592–593
- Theresienstadt Ghetto, 514

Poison in the Pen (Wentworth), 926

Poland, 366, 651, 653–662

Police
- Cape Flats, Cape Town, South Africa, 708, 710
- observation studies, 180
- Polit, D.F., 183–184
- Political advocacy, 687–688, 874
- Political appointments, 444–445, 448–449
- Political organizations, 702, 706–708, 709

Political power, 76–78

Positivist tradition, 83–84, 98

Post-war reconstruction, 474–489

Posters, 524

Potsdam Conference (1945), 653, 662

Pound, Ezra, 592–593

Poverty
- developing countries, 847–848, 857
- L’Heure Joyeuse Brand Whitlock, Belgium, 469–470
- South Africa, 702

Power
- archivist leaders, 155
- discourse analysis, 76–78, 80
Power, Effie Louise, 462n
Predictions (Nostradamus), 590
Preece, J., 144
Prejudice. See Discrimination and prejudice
Preservation and protection
  Bibliothèque Nationale, France, 443, 447
  cultural heritage during war time, 371–383
  geospatial data, 219, 274, 296–301, 304–314
  international law, 731
  Iraqi House of Manuscripts, 736
  moral imperative, 746–755
  Prussian State Library music collection, 651, 652, 660
  Tianyige Library, China, 427
Princeton University Library Digital Map and Geospatial Information Center, 254, 256–262, 261/
Principles of the National Polity (report), 560
Print disabilities, 898
  Canadian National Institute for the Blind, 975
  choice in accessible formats, 864, 865
  definition, 849
  knowledge society, 934
  Libraries for the Blind Section (IFLA), 866–867, 869–870, 881, 890
Print vs. electronic materials
  blind and visually impaired users, 769
  copyright issues, 309
  geographic information, 319
Printing and reprinting
  Chinese texts, 415, 416, 418
  Modern Library Series, 583, 591, 593
  Siku Quanshu (ancient text), 390, 394
Prisons and jails, 74, 577
Prisse d’Avesnes, Achille-Constant-Theodore Emile Prisse, 452n
Privacy
  geographic information, 244–245, 275
  materials for visually impaired, 779
  observation methods, 184
Private histories, 416
Production, of materials for visually impaired
  copyright issues, 879–916, 979
  developing countries, 849, 859–860
  digital talking books, 944
  libraries for the blind, 865–866, 872, 973–974, 979–987, 988
  Nigeria, 831, 833, 838, 840, 841–844
  Philippines, 856
  Russia, 854
  selection, 768–770, 776, 821
  statistics, 803
  techniques, 774, 777, 804, 824
  Vietnam, 855
Productivity, labor, 20n
Professional associations
  American Anthropological Association, 185
  archival standards, 148–149
  geographic information, 232–233, 358–359
  hospital librarians, 539–540, 545–546
  International Federation of Library Associations, 867–868
  Japan Library Association, 554–556, 557, 561–564, 566
  services for visually disabled, 762, 788
  Society of American Archivists, 149, 150, 151
  South African Library Association, 702
  See also American Library Association (ALA)
Professionalism. See Librarianship
Professors
  Bendix, Dorothy, 679
  Columbia University, 624–625, 627–628
  Duchac, Kenneth, 679, 680
  Sterling, J.A.L., 879–880
  Stęszewski, Jan, 657
  Zissa, Zofia, 656
Progressivism, 486
Project LIBRA, 792, 815
Project management, 991
Prokofiev, Sergey, 921
Pronunciation, 985
Propaganda
  Franklin Book Programs, 642
  Japan, 560–561
  public technical libraries, UK, 476
Proposals, grants, 720
Prospective designs, 142
Prototypes, 806
Provenance
  German Freedom Library, 527
  Jewish Museum of Prague Library, 521
  National Geospatial Digital Archive, 311
  Nazi era materials, 533n
Prussia
  Franco-Prussian War, 1870, 443
  Prussian State Library, 366, 651–664
Public discourse, 76–77
Public health, 461, 462
Public information
  Federal Depository Library Programs, 254–255
  geographic information, 242–243, 244, 260, 266, 272
Public libraries
  American Library of Nazi-Banned Books, 524–525, 528–532, 534n
  babies and toddlers, 190, 192–198
  Belgium, 465, 472
  Bryansk Region Research Library (BONUB), Russia, 717, 719–727
  and children’s services, 598–599
  China, 400, 426
  Colored Carnegie Library, Houston, 666, 669, 671–673
  Columbia University bicentennial, 633–634
  developing countries, 849
  Finland, 538, 539, 542, 546, 548
  Gainesville, TX, 701
  German Freedom Library, 524–527, 531–532
  Houston Public Library, 665–674
  Japan, 551, 554, 557–560, 562–563, 567n
  “Man’s Right to Knowledge” display, 631–632
  mission statements, 76–77
  Montreal, Canada, 601
  The New York Public Library, 46–59
  Nigeria, 831–833
  observation studies, 175
  performance measurement, 107
Public Library of the City of Boston, 676
public technical libraries, UK, 474–489
research, 606n
San Diego Public Library, 570–582
services for visually disabled, 762, 763, 764, 792, 793, 820, 823–824, 855, 865, 866, 897
South Africa, 698–715
systematic reviews, 203
United Kingdom, 810, 964
World War I, 454–463
Public Library Inquiry (1947–50), 676
Public opinion
  cultural sites protection, 375
  international relations, 610
  Modern Library Series, 593
  Montreal, Canada, 602–603, 605–606
Publications
  From Aligoté to Zinfandel (Aspler), 982
  An Anthology of Famous English and American Poetry, 592–593
  Archaeology of Knowledge (Foucault), 72
  The Complete Plain Words (Gowers), 925
  Complete Poetical Works (Keats and Shelley), 589
  Content Analysis in Communications Research (Berelson), 42n
  Course in General Linguistics (de Saussure), 67
  Death and Co (Brierley), 926
  Democracy in America (de Tocqueville), 591
  The Detective Wore Silk Drawers (Lovesey), 926
  Directory of Transcription Services: Braille, Tape, Moon and Large Print, 815
  Doing research with children and young people (Fraser et. al.), 200
  Doing research with children (Grieg and Taylor), 199
  Eats, Shoots and Leaves (Truss), 925
  GIS and Public Data (Ralston), 231–232
  GIS DATA Sources (Decker), 231
  Harry Potter and the Chamber of Secrets (Rowling), 922

Rayzor, Mrs. Newton, 667–668

Reading
blind and visually impaired users, 761, 763, 764, 807, 809, 834–835, 840, 841f, 923–924, 933–934, 941
child development, 603, 606
freedom to read, 629–630
Japan, 551–569
L’Heure Joyeuse Brand Whitlock, Belgium, 467, 470
Modern Library Series, 586, 589–592
reading groups, 553
soldiers, 541–545
Theresienstadt Ghetto Central Library, 514, 515–516
Reading levels
medical information, 92
reading guidance, 557
Reading rooms, 461, 468–469, 798
Realism, 750
Reality, life histories, 134
Reclus, Elie, 446–451
Reclus, Elisée, 452n
Records (LPs)
Columbia University bicentennial, 633
talking books, 799, 812, 884
Recreation. See Entertainment and recreation
Red Cross, Finland, 539
Red Sea Over China (Snow), 592
Redmond, WA, 992
Reeder, Dorothy, 490, 493, 494–502, 509, 511n
Reel-to-reel tapes, 982
Reference interviews
discourse analysis, 66, 68, 69, 70–72, 81
geographic information, 292, 318–319
Reference services
chat reference, 59, 71
critical incident technique research, 59
geographic information, 220, 318–320, 327–339, 332f, 333t
observation studies, 175
online reference, 71–72
Refreshable Braille, 891
Register of cultural heritage sites, 427
Regulatory agencies, 238
Rehabilitation Act (1973), 953
Reinker, K.A., 206
Relationships
International Relations Office
(ALA), 609–622
libraries and data producers, 218–219, 232
libraries and schools, 567n
libraries and users, 466
library mentors, 359
life histories research method, 133
network (interpersonal) analysis, 153–154
observation methods, 181
public and special libraries, 576
users and publishers, 892
Relevance judgments, 144–145
Reliability
evaluation research, 115
observation methods, 185–186
Religion and religious leaders
Benedictine order, 653
Iraqi religious documents, 733–735, 739–740
Levinthal, Israel Herbert, 529–530
Wise, Stephen, 531
Remote sensing, 340–348
Replication (research methods)
case studies, 9, 11, 15
content analysis, 27
meta-analysis, 159
Reporting (research findings)
blind and visually impaired users, 787–788
case studies, 14–15
content analysis, 39–40
critical incident technique, 51
evaluation research, 117
information seeking research, 91–92, 95–96, 97–98
life histories, 130–131, 135
meta-analysis, 158–170
systematic reviews, 202, 207, 210, 212
Reports
Access to Libraries study, 677
ACONDA (Activities Committee on New Directions, ALA), 683–692
Japanese library committee, 559
Libraries for the Blind Section
(IFLA), 871
Share the Vision program, 892
Repositories. See Virtual libraries
Reprints. See Printing and reprinting
The Republic (Plato), 589
Repurposing content, 295
Research. See Library and information science research
Research and development, 480–482, 488
Research data, 238
Research goals
- accessible format materials research, 835
- archivists study, 155
- critical incident technique, 47
- evaluation research, 104–105, 114, 116–117
- life histories, 136
- longitudinal design, 140–157
Public Library Inquiry, 676
systematic reviews, 208
Research libraries. See Academic libraries
Research Libraries Group (RLG)
collection development policies, 311
MARC AMC (Archival and Manuscript Control), 149–150, 151
Research methods, 1–3
- accessible format materials, 835–836
- blind and visually impaired users, 787, 789
- case studies, 4–21
- content analysis, 22–45
- critical incident technique, 46–64
discourse analysis, 65–84
ethnographic techniques, 83–101
evaluation research, 102–120
life histories, 121–139
observation, 171–189, 190–201
Russian libraries research, 727
See also Design, research projects
Research proposals, 137
Researcher roles
- life histories research method, 134–135
- observation, 172, 173–179, 187
Researchers
Adimorah, E.N.O., 842
Adler, P.A. and P., 171–172, 176, 177, 178, 184
Ahuvia, A., 40
Alstad, Colleen, 76
Ankem, K., 165–166
Argentati, Carolyn D., 352–353
Baker, L.M., 175, 176
Barrett, P., 962
Bates, M.J., 86
Berelson, B., 42
Berry, J., 960
Bertot, J.C., 106–107
Beverley, C.A., 209–210
Biernacki, P., 182–183
Bores, Dorothée, 527
Bow, A., 86
Carey, R.F., 175, 176
Case, Donald, 8
Case, P., 175, 176
Charmaz, K., 86
Chatman, Elfreda, 85–86, 177, 180, 185, 186
Christensen, Thomas Kjellberg, 941
Cook, D.J., 203–204
Craddock, Peter, 792, 814
Craven, J., 960
Curry, Ann, 76
Dawes, S.S., 267
Day, Mark, 79
de Saussure, Ferdinand, 67–68
Decker, D., 231
Dervin, Brenda, 1, 85, 86
Ding, S., 200
Dorsey, L., 328
Douglas, R.M., 206
Duggan, L.J., 144
Dühring, Margit, 941
Emerson, R.M., 131
Fidel, Raya, 4–5, 8, 17
Fisher, S., 58
Flanagan, J.C., 47
Floyd, M., 962
Forsythe, D.E., 179
Foucault, Michel, 72–76, 79, 80
Fraser, S., 200
Fretz, R.L., 131
Frohmann, Bernd, 73–74, 77–78
Given, L.M., 175
Gold, R.L., 175–174, 176, 177
Graue, M.E., 200
Green, R., 29
Grieg, A., 199
Guba, E.G., 6–7, 38
Hahn, K., 34, 38
Hamer, J.S., 58–59
Harris, M., 205, 606n
Harvey, F., 266
Researchers (continued)
Haug, J.D., 166
Haynes, R.B., 203–204
Heinzl, A., 144
Hench, K., 328
Hjornland, B., 166
Hungler, B.P., 183–184
Hwang, M.I., 164–165
Jadad, A.R., 213
Jenkins, Christine, 598
Johnson, R.B., 185–186, 187
Jorgensen, D.L., 181, 184
Julien, H., 144
Kellar, William Henry, 665, 666
Keller, M., 200
Kelly, T., 811, 812
Kesling, K.L., 206
King, M.P., 142
Kinikin, J., 328
Krippendorff, K., 23–27, 34, 41, 42n
Kuhlthau, Carol, 8–9, 144
Lancaster, F.W., 112
Leckie, G.J., 175
Lewis, V., 200
Lin, J.W., 164–165
Lincoln, Y.S., 38
Lyytinen, K., 145
Manaszewicz, R., 90
Matthews, J.R., 107, 112
Mayring, P., 27
McClure, C.R., 106–107
McCormick, B.G., 341
McKechnie, L., 175
Merens, R.A., 164
Mills, E., 213
Mulrow, C.D., 203–204
Munde, Gail, 350
Murphy, Sarah Anne, 71
Mustonen-Ollila, E., 145
Neuendorf, K.A., 29, 41
Nitecki, D.A., 29
Nohrström, Kyllikki, 538–539
Ondrusk, A.L., 205–206
Oskam, S., 267
Oulton, T., 58
Ozkaramanli, E., 59
Pearsall, M., 175–176, 177
Pellegrini, A.D., 200
Pilling, D., 962
Polit, D.F., 183–184
Preece, J., 144
Radford, M.L., 59
Ralston, B., 231–232
Raymond, Boris, 693–694
Reinker, K.A., 206
Richardson, Tommy, 356
Robinson, C., 200
Ross, C., 213
Ross, Catherine Sheldrick, 70
Salang, M.M.C., 164
Sandstrom, A.R. and P.E., 179–180
Saxton, M.L., 162, 164
Schoberth, T., 144
Scott, W. Richard, 510
Shaw, L.L., 131
Soergel, D., 144–145
Spencer, J., 328
Spradley, J.P., 177, 179, 183–184, 185
Stein, Linda, 356
Stevenson, Siobhan, 77
Taylor, J., 199
Thomison, Dennis, 694
Van Fleet, C., 114
Waldorf, D., 182–183
Wallace, D.P., 114
Wallis, L., 834
Walsh, D.J., 200
Wang, Hongjie, 351
Wang, P., 39, 144–145
Wantland, D.J., 165
Weick, K.E., 5
Weightman, A.L., 204, 211, 212
Weiss, C.H., 103–104, 112, 117
White, M.D., 39, 144–145
Williamson, J., 204, 211, 212
Williamson, Kirsty, 90, 93
Wilson, K., 213
Winning, M.A., 209–210
Wojewodzki, Catherine, 356
Yin, R.K., 9, 13f
Zimmerman, C.A., 266

Resolution (graphics), 257–258

Restoration and restitution
Chinese Imperial Library, 406–413, 414–415, 417
Hanlin Academy, China, 437
Iraqi collections, 740–741
Jewish Museum of Prague Library, 521
post-World War II, 381
Prussian State Library music collection, 652, 654–661

See also Post-war reconstruction
Results lists, 921–922
Retail stores, 588
Retirement communities, 177, 180, 185
Retroactivity (copyright law), 896
Retrospective designs, 142
Revealweb database, 763, 819, 822, 918, 923, 929
Rewards (incentives), 408, 411, 418
Reynolds, Harriet, 667–668, 669, 670, 672
Richardson, Tommy, 356
Right to access to information
accessible materials, 781, 825, 828, 951
copyright issues, 770–771
developing countries, 850, 862
globally recognized right, 772, 889–890, 914n, 934–935
Libraries for the Blind Section (IFLA), 867, 868
See also Freedom to read
Rights protection technology, 912, 945, 946
Risk, preservation issues, 309–311
RLG. See Research Libraries Group
Robbery
Bibliothèque Nationale, France, 445–446
Iraq War (2003–), 731, 738
juvenile delinquency, 600
Nazi Germany and Jewish possessions, 379–380, 381, 519, 533n
Nazi Germany and Polish possessions, 661
Tianyige Library, China, 426
UNIDROIT Convention (1995), 751
Roberts Commission, 372, 376
Robinson, C., 200
Rockefeller Foundation, 611, 613–614, 617, 618
“Romeo and Juliet” (music), 921
Roosevelt, Franklin Delano, 523, 524, 532n
Ross, C., 213
Ross, Catherine Sheldrick, 70
Round Table for Social Responsibilities in Libraries (ALA), 679–680
Rowling, J.K., 922
Royal National Institute of the Blind (RNIB), 810, 812, 814–819, 917–918, 984
Rural libraries, 678
Russia
and Finland, 537
ideological indoctrination, 363
libraries for visually impaired, 853–855
post-Soviet era libraries, 716–729
Siku Quanshu (ancient text), 392
See also Soviet Union
S
Sainte-Beuve, Charles-Augustin, 450
Salang, M.M.C., 164
Sales revenue, 588t
Sample design (research methods)
case studies, 9, 10
content analysis, 31, 36–37
ethnographic techniques, 87
life histories research method, 124–125
observation methods, 182
San Diego Public Library, CA, 570–582
San Diego Union, 573
Sands, René, 465
Sandstrom, A.R. and P.E., 179–180
Sarajevo, Yugoslavia, 363
Satellite images, 226–227
Saxton, M.L., 162, 164
Scale (geospatial data), 224, 225
Scanning
books, 900–901
maps, 257–258, 319, 331
Schoberth, T., 144
Scholarship
ancient China, 413–414, 415, 416
Copernicus Group, 661–662
Modern Library Series, 584
Sainte-Beuve, Charles-Augustin, 450
Siku Quanshu (ancient text), 390
Schools
Burkina Faso, 858
CLASP (Connecting Libraries and Schools Project), 46, 49–50
desegregation, 665, 666
developing countries, 848, 850
Japan, 567n
materials for visually impaired, 798
Nigeria, 831, 833, 834, 838, 838t
South Africa, 703–704
St. Louis, MO, 457, 458–459, 461
Science information, 279–280, 480–482

INDEX 1035
Scientific detachment, 178–179
Scoliosis, 206
Scotland, 866, 867–868
Scott, W. Richard, 510
Screen readers, 955, 961, 963
Search strategies
  health information, 204
  information overload, 205–206
  materials for blind and visually impaired, 775, 789, 802, 921
  systematic reviews, 208–210
Secrecy, 654–655
Section 108, Copyright Act (1976), 309
Securities analysts (finance), 8
Security measures
  Bibliothèque Nationale, France, 447
  black-out precautions, 495–496
  Integrated Digital Library System, 989
See also National security
Seeger, Charles, 491
Segregation, 666–667, 669–670
Self determination, 889–890
Seminars. See Conferences and seminars
Sense-Making methodology (Dervin), 85, 86
Series cataloging, 923–924, 927–928
SERV-QUAL (questionnaire), 108
Servers and server software
  geographic information systems, 256, 262
  Integrated Digital Library System, 990
  JP2 Image Server, 259
  map servers, 288, 293–294
Sex workers, 175, 176, 180
Shakespeare: A Portrait Restored
  (Chambrun), 511n
Shakespeare, William, 590–591
Shang Wu Yin Shu Guan (Commercial Press), 426, 429n
Share the Vision (STV) program, 814–828
Shared meaning. See Meaning
Sharp, George C., 506
Shaw, Charles, 667–668
Shaw, L.L., 131
Shelley, Percy Bysshe, 589
Shelving, 520
Shengjing, China, 392
Shibuya Kunitada, 564
Si Ku Quan Shu. See Siku Quanshu
  (Chinese text)
Sichuan region, China, 415
Sight Savers International, 851
Siku Quanshu
  (Chinese text), 366, 387–403, 425
Silesia (region), 653
Sima Guang, 416
Simon, Jules, 448–449
Site licenses, 227
Smart, Charles Allen, 595n
Smith, Datus, 641–642, 644, 646
Smith, Lillian, 599
Smith v. Allwright (1944), 666–667
Snow, Edgar, 592
Snowballing
  observation studies, 182–183
  systematic reviews, 209
Social aspects
  constructivist research frameworks, 85–86
  discourse analysis, 66, 72–76, 79–80
  evaluation research, 102
  social intercommunication, 96–98
Social classes
  desegregation, 665–674
  L’Heure Joyeuse Brand Whitlock, Belgium, 469–472
  public libraries, 606n, 678
  public technical libraries, UK, 487n
  reading, 545
Social reform
  rights of visually impaired, 889
  Russian libraries, 716–729
  social responsibility, 679–695
  South Africa, 698–715
Social Responsibilities Round Table (SRRT), 695n
Social responsibility, 675–697
Social Science Research Council, 676
Social sciences
  longitudinal design, 140–141
  philosophy of research, 83–85
Socialism
  Paris Commune of 1871, 442–443, 447
  South Africa, 702, 712n
Socialization, 122–123
Society
  and information, 933
and libraries, 362, 364, 366, 475, 476–478, 483, 532, 554, 700–703
and social change, 375
and war, 362, 547, 594–595, 599–600
Society of American Archivists (SAA), 149, 150, 151
Sociology, 5–6
Soergel, D., 144–145
Software
ArcGIS, 317
assistive software, 962
Braille transcription, 887
BrookesTalk Web browser, 955
CLASP (Connecting Libraries and Schools Project), 60n
content analysis research, 36t, 40–41
DUXBURY, 981
geographic information systems, 256, 257f, 259–260, 324, 328–329, 352–353, 353, 355
JAWS (screen reader), 955
library user fees, 343
Microsoft Access, 331
Microsoft Commerce Server, 988
multimedia authoring software, 939–940
Text-to-speech software, 984
Soldatenheim (soldiers’ homes), 540–541
Soldiers
Bencowitz, Isaac, 381–382
reading, 496–497, 499, 536, 541–545
soldiers’ homes, 540–541, 548n
South Africa, 704
Stuurman, Douwe, 380–381
visually impaired veterans, 798
Song Dynasty, China, 404–420
Soros Foundation, 727n
Source files (digital text)
accessible format production, 980, 981, 982
accessible format publishing, 772–773, 824, 922
copyright issues, 891, 892
Digital File Repository, 765–766
digital talking books, 942–943
file sharing, 861–862
South Africa
Constitution, 914n
copyright issues, 905, 906
public libraries, 698–715
South African Communist Party, 712n
South African Library Association (SALA), 702
South Wind (Douglas), 595n
Soviet Union
Cold War, 640
and Finland, 537–538
Manchuria, 394–395
and Poland, 653, 654–655
post-Soviet era libraries, 716–729
See also Russia
Spanish Influenza (1918), 460–461, 462n
Spatial data infrastructures (SDI), 264–265, 266–267
SpatialDirect software, 259–260
Special Education Needs and Disability Act (UK, 2001), 952
Special libraries
American Library in Paris, 491–510
collection development, 224–226
Hochschule für die Wissenschaft des Judentums, 518
Iraqi collections, 733–740, 742
Islamic Library in Cape Town, 701
military hospitals, 536–550
Prussian State Library music collection, 651–664
public technical libraries, UK, 474–489
San Diego, CA, 576
Theresienstadt Ghetto Central Library, 513–522, 517t, 518, 519
See also Health science libraries;
Libraries for the blind and visually impaired
Speech
discourse analysis, 67–68, 75–76
speech synthesis, 762, 891, 955, 984
SPEECH project, 955
Spencer, J., 328
Spetshkran (Russia), 718
Spradley, J.P., 177, 179, 183–184, 185
SQL Server, 256
Sri Lanka (Ceylon), 615
St. Louis, MO, Public Library, 455–462
Staff development
critical incident technique, 58
georaphic information services, 220–221
Japan, 554–555
Staff development (continued)
  mentoring, 350, 351
  services for visually impaired, 876
t  technical skills, 980–981, 990
Staff dismissals, 448
Staff resources
  Florida International University, 343
  Franklin Book Programs, 645
g  geographic information systems,
  261, 352–356, 354f, 355
San Diego Public Library, 580
St. Louis Public Library, 459, 461
  systematic reviews, 208
  University of Florida, 345
Stamps
  book stamps, 518
  postage, 630
Standards and guidelines
  accessible Web sites, 953, 969
  Braille, 797–798, 799, 810–811, 857, 882
  DAISY standard, 765, 766, 872, 877, 895, 932–949, 977, 978f, 982, 984
d  digital talking books, 803–804, 897
e  evaluation research, 110, 115–116
g  geospatial data, 273–274, 294, 297
h  The Guidelines for Subject Access to
    Individual Works of Fiction, Drama,
    Etc. (ALA), 924
i  hospital libraries, 546
j  information seeking, 15
k  International Standard Text Code, 923
l  journal submissions, 158–159
m  Library Services for Visually Impaired
   People: A Manual of Best Practice, 820
n  MARC 21 Bibliographic Format, 921
o  MARC AMC (Archival and
   Manuscript Control), 141,
   145–155
p  meta-analysis, 159, 167–168
q  Moon type, 810–811
r  observation methods, 185, 198–199
s  PDF (Portable Document Format), 773
  services for visually impaired users,
  788, 816, 823, 871–872, 873
  Synchronised Multimedia
    Integration Language, 941
  Unified English Braille Code, 843
  Web-Braille standard, 801–802
Web Content Accessibility
  Guidelines, 956–960
Web interfaces, 836
Web Map Server 1.0, 289
Stanford University, 305–312, 307f
Starke, Käthe, 520–521
Starvation, 748
State Department, U.S.
  American Embassy, Paris, 498
c  cultural diplomacy, 640, 642–643
  and International Relations Office
  (ALA), 619
State government data, 229, 238, 242–
  243, 244, 288–289
State libraries, Nigeria, 831–833, 844
State University System of Florida,
  342–346
Statistics
  accessible format materials, 837f
blind and visually impaired, 934
  CLASP (Connecting Libraries and
Schools Project), 52, 54
  content analysis research, 40
e  evaluation research, 115–116
  geographic information services,
  354
  librarian consultation services, 328,
  331–334, 332t, 333t, 339
“Man’s Right to Knowledge” display,
  632
  materials for visually impaired, 803,
  842, 945
  meta-analysis, 161, 167
  military hospital circulation, 542–
  543, 543t
  Modern Library Series, 588t
  publishing, 587
  reference, 220
  research methods, 6
  Russian libraries, 720–721
  services for visually impaired, 836–
  840, 841f
  systematic reviews, 212
  University of Kansas Libraries, 315
  Yale University, 330
Steel-Maitland, Arthur, 484
Stein, Linda, 356
Sterling, Anita, 671
Sterling, J.A.L., 879–880
Stern, Guy, 533n
Stęszewski, Jan, 657
Stevenson, Burton, 491
Stevenson, Siobhan, 77
Stone tablets, 429n
Storage area networks (SAN), 989
Storytimes
  babies and toddlers, 190, 191–198
  L’Heure Joyeuse Brand Whitlock, Belgium, 471
St. Louis Public Library, 456, 459
Stowe, Harriet Beecher, 534
Streaming Web services, 219
Students
  Burkina Faso, 858
  CLASP (Connecting Libraries and Schools Project), 46, 52–59, 60n, 63–64
  information seeking, 144
  L’Heure Joyeuse Brand Whitlock, Belgium, 469
  library consultations, 331–334, 332t
  library employees, 261, 356–357
  materials for visually impaired, 887–888, 899, 927
  Nigeria, 831, 834, 836, 838, 839–840
  observation studies, 175
  research preparation, 206–207
  St. Louis Public Library, 457–458
  Texas Southern University for Negroes, 670
  See also College students
Study effect (case studies), 18–19
Studying children in context: Theories, methods, and ethics (Graue and Walsh), 200
Stuurman, Douwe, 380–381
STV News (journal), 815
Subject headings, 172–173
Subjectivity. See Objectivity
Sublicensing, 245, 249
Subscription libraries
  American Library in Paris, 492
  National Library for the Blind, 811
Sulzberger, Arthur, 624, 625
Summaries, 925–926
Support groups, 175, 176
SupportEAM, 958, 967
Supreme Court, U.S., 239, 372
Surveys and questionnaires
  accessible Web design, 966, 967–968
  Bryansk Region Research Library (BONUB), Russia, 721, 727n
CLASP (Connecting Libraries and Schools Project), 63–64
critical incident technique, 48, 49, 50, 51–56
evaluation research, 110
financial information seeking, 94
health sciences libraries, 351
LibQUAL+, 108
SERV-QUAL, 108
visually impaired services research, 790, 792, 799, 815, 821, 830, 835–840, 962
See also Library and information science research
Swank, Raynard, 613
Sweatt v. Painter (1950), 666–667
Swedish Library of Talking Books and Braille (TPB), 936
Symbolism, 524, 532, 532n
Synchronised Multimedia Integration Language (SMIL), 941
Syndicated materials, 888
Synthetic speech output. See Speech
System design
  catalog of accessible materials, 918, 929–930
digital talking books, 804, 805
geographic information systems, 254–262, 257f
Integrated Digital Library System, 987–991, 989f
National Geospatial Digital Archive, 305–308
Web sites, 951, 953, 955, 956–969
Systematic reviews, 202–215

T
Tables of contents, 926–927
Tables (research findings), 39
Take-overs (corporate), 888
Talking books
  copyright issues, 884, 886–887, 891, 895, 896–897, 905
  DAISY standard, 872, 933, 940–945, 977
digital format, 978
history, 883, 936
Nigeria, 833, 842
Talking books (continued)
Royal National Institute of the Blind, 812, 813
user experiences, 763, 764, 765
Vietnam, 855
Target audiences, 926
Taschereau, Jules, 443
Taxes, 770
Taxonomies, 774–775
Taylor, J., 199
Teaching
Braille, 843
Japan, 556
research preparation, 206–207
Technical information, 480–482, 487
Technical skills
blind and visually impaired users, 789–790, 821, 836, 844, 978
production of materials, 980–981
Technical support
blind and visually impaired users, 978
geographic information systems, 261, 325
geospatial data, 287
Integrated Digital Library System, 990
Technological development. See
Information technology
Teen pregnancy, 203, 214
Tehran, Iran, 644, 645
Tejchma, Józef, 657
Telecommunications
materials for visually impaired, 779, 935
wide-area networks, 854
Television, 779
Termination of research, 181
Terms and terminology
Biblioteka (Russian journal), 724–725
blind and visually impaired, 759, 880
Bryansk Region Research Library (BONUB), Russia, 721
content analysis research, 29
disadvantaged, 678
ethnographic techniques, 99n
genre fiction, 924
meta-analyses, 163–166
observation methods, 172
TESTLAB Project, 790–791, 816
Texas
Houston Public Library, 665–674
Texas A&M University, 108
Texas Southern University for Negroes (TSUN), 670
Text-to-speech (TTS) software, 984
Textbooks
Franklin Book Programs, 646
Living with Uncertainty (textbook), 926
materials for visually impaired, 859, 887–888, 927
The Hague, Netherlands, 852
Theoretical replication, 11
Theoretical sampling, 87
Theories and hypotheses
content analysis research, 30, 37
discourse analysis, 77–78
evaluation research, 103–104, 114, 116–117
observation methods, 186
Theresienstadt Ghetto Central Library, 513–522, 517t, 518, 519
Thiers, Adolphe, 443
This I Believe (book), 644
“This I Believe” radio program, 638–639
Thomison, Dennis, 694
Thorpe, Frederick, 813
Thought police, 555–556
Thumbnail images, 260
Tianyige Library, China, 421–429
TIFF file format, 258, 259
TIGER/Line, 231
Tocqueville, Alexis de, 591
Toddlers and babies, 190–201
Topographic maps, 290
Toshokan Zasshi (publication), 558–559, 563–564, 565
Total quality management (TQM), 107
Towel project, 960
T.R. Smith Map Collection, University of Kansas, 316, 319
Training and workshops
Braille, 843, 859
children’s librarians, 466–467
donations of, 861
Japanese librarianship, 565
library mentoring, 358, 359
management training, 855
MARC AMC (Archival and Manuscript Control), 150
observation methods, 179
public technical libraries, UK, 482
research preparation, 206–207
services to visually impaired, 838–839, 856
Web accessible design, 968–969
Transaction log analysis, 174
Transcripts
accessible formats, 844, 887, 926–927
case studies, 13
conventions of transcribing, 70
copyright issues, 891
Directory of Transcription Services: Braille, Tape, Moon and Large Print, 815
life histories, 129
observing babies and toddlers, 192
Transferability (research methods)
case studies, 7
content analysis, 36–37, 38
Translations, 639
Travel
International Relations Office (ALA), 614–617
visually impaired, 960
Travillian, Maurice, 692
Treaties
Berne Convention for the Protection of Literary and Artistic Works (1886), 893–894, 901–902
Hague Convention (1954), 731, 743n, 750–751, 754n
Potsdam Conference (1945), 653, 662n
Truss, Lynne, 925
Trust
data sharing, 266
geographic information services, 335
life histories research method, 133
National Geospatial Digital Archive, 309
observation studies, 185
Trustworthiness (research methods), 6–7
Turkey, 615–616
Turku, Finland, 541
Twins, 206
U
Ukraine, 857
Ulverscroft Foundation, 875–876
Ulverscroft Large Print Group, 813
Uncle Tom's Cabin (Stowe), 534
Underserved users, 684, 691, 693, 702, 793
Unecha, Russia, 724
UNIDROIT Convention (1995), 751
Unified English Braille Code (UEBC), 843
Unified Web Accessibility Methodology (UWEM), 958
United Democratic Front (South Africa), 706–707, 711n
United Kingdom
blind and visually impaired users, 760–766, 768–769, 788, 792, 793, 809–829, 917–918, 952, 964, 965, 966–967, 968
British Ordnance Survey, 257
copyright issues, 894, 896, 898, 899, 912
critical incident technique, 58
Disability Rights Commission (UK, DRC), 959
English Americans, 458
government Web sites, 957
hospital libraries, 538
librarianship for the visually impaired, 758
Peking Siege of 1900, 434–435, 436
public technical libraries, 474–489
rights of blind and visually impaired, 771
United Nations (UN)
Declaration on Human Rights, 914n
disabled persons' rights, 788
International Covenant on Civil and Political Rights, 934–935
UNESCO, 750
United States Geological Survey (USGS), 257–258
United States Information Agency (USIA), 643
United States Postal Service
Columbia University stamp, 630
materials for visually impaired, 797
unitizing (data), 29–30
Unity System (UK), 816
Universities and colleges
Arizona State University West, 328
Columbia University, 623–637, 627
Cornell University Geospatial Information Repository, 275–281
Florida International University, 343–344, 347
Jagiellonian University Library, 366, 651, 653–662
Loughborough University, UK, 792, 820, 821
materials for blind and visually impaired, 952, 964
North Carolina State University, 289, 297, 352–353
Princeton University Library Digital Map and Geospatial Information Center, 254, 256–262, 261f
Stanford University, 305–312, 307f
State University System of Florida, 342–346
Texas A&M University, 108
Texas Southern University for Negroes, 670
Yale University Library, 327–339
University Development Program (UDP), Rockefeller Foundation, 617
University of Alabama, 665–666
University of California, Santa Barbara, 305–312, 307f
University of California-Stanford Map Libraries Group, 311
University of Florida Library, 344–346, 347
University of Illinois, 364–365, 367–368
University of Ilorin, Nigeria, 839
University of Kansas Libraries, 315–325, 325n
University of Leuven, 373
University of Maryland, 357–359
University of Michigan, 676
University of Virginia, 613
Updating content, 274, 277, 288, 290, 296, 300, 310
Upgrades (software), 962
Urakawa Joint Project, 939–940

URLs
Australian National Library, 438–439n
Content Analysis News and Discussion List, 42
Cornell University Geospatial Information Repository, 275
FORCE Foundation, 862
geographic information, 228t, 231t, 232t
health information, 212–213
Holocaust Memorial Museum, 533n
Iraq National Library and Archive, 365
Iraqi collections, 743n
Japanese internment camps, 581n
materials for visually impaired, 931n, 948n
University of Kansas Libraries, 325n

Usability
catalog of accessible materials, 918, 921–922, 929–930
talking books, 940
Web design for visually impaired, 950–972

User agreements, 245–246, 268f, 275

User behavior
American Library in Paris, 506
blind and visually impaired users, 789
children in libraries, 467–472, 470, 471–472
geographic information services, 334–338
information overload, 205–206
Notre Dame de Grace Library for Boys and Girls, Montreal, 597–608

User-centered services, 466

User demand
accessible Web sites, 962
geographic information services, 294
Modern Library Series, 586, 589–590, 594
radio lectures, 633
services for visually impaired, 834, 855, 890

User demographics
L’Heure Joyeuse Brand Whitlock, Belgium, 469–470
University of Kansas Libraries, 319
User experiences
blind and visually impaired, 760–766, 767–784, 960–961, 978f
life histories, 126–129
medical information seeking, 91–92
observed in natural environment, 3
quality assessment, 107–108
relevance judgments research, 144–145
student public library users, 52–56, 57–58, 63–64
User interfaces
accessible format materials catalogs, 929–930, 988, 991
talking books, 805–806
Web sites and visually impaired users, 836, 954
User log-ons, 316
User needs
blind and visually impaired users, 758, 770, 781, 785–795, 803, 874
geographic information services, 224–226, 318–319, 320, 331–334
Japan, 559
Russian libraries, 717, 721–723
San Diego Public Library, 575
User profiles, 976
User testing
accessible Web sites, 958, 959, 966
talking books, 806
Utitz, Emil, 515, 520–521
V
Vaccinations, 213
Vaillant, Edouard, 446–447, 452n
Valenti, Jack, 668, 673n
Validation tools (Web sites), 963–966
Validity
evaluation research, 115
life histories research method, 134–135
meta-analysis, 162–163
observation methods, 178–179, 185–186
quantitative content analysis, 31
Van Doren, Mark, 627–628
Van Fleet, C., 114
Variables (research methods), 161, 162, 167
Varley, Douglas, 703
Vector geospatial data, 223, 255, 259–260
Vendors. See Content producers
Version control
geospatial data, 277, 300, 310
materials for visually impaired, 922
Veterans, 798
Vichy France, WWII, 499, 507
Victory Book Drive, 577
Video broadcasting, 778–779
Vietnam, 855–856
Vincent, Jules, 442, 444–446, 451n
Violence
Bibliothèque Nationale, France, 449
against library staff, 365, 505
South African libraries, 700, 704, 708, 710, 713n
Virginia
University of Virginia, 613
Virtual libraries
accessible Web design, 953–954
Bookshare.org, 881, 900–901, 910
Canadian National Institute for the Blind, 873, 991, 992
Cornell University Geospatial Information Repository, 275–281
DAISY standard, 932, 948
Danish National Library for the Blind, 944, 947
digital technology, 771, 772–774
geographic information, 230–231, 231f, 232, 232f, 254–262
Libraries for the Blind Section (IFLA), 875, 877
Visually impaired. See Blind and visually impaired users
Vitamin C, 206
Vocational training
public technical libraries, UK, 482, 487n
services to visually impaired, 839, 856
Volunteers
American Library in Paris, 497
FORCE Foundation, 853
digital technology, 771, 772–774
geographic information services, 338
Libraries for the Blind Section (IFLA), 870
military hospitals, 536, 537, 539–540, 542
National Library Service for the Blind and Physically Handicapped, 801
Volunteers (continued)
outreach to sex workers, 176
San Diego, CA, 580
soldiers’ homes, 540

W
Waldorf, D., 182–183
Wallace, D.P., 114
Wallace, George, 665–666
Wallis, L., 834
Walsh, D.J., 200
Wang, Hongjie, 351
Wang, P., 39, 144–145
Wang Zao, 406
Wantland, D.J., 165

War, rebellions, and revolutions, 361–369
American Library in Paris, 490–512
Americans in WWII, 370–386, 570–582
children in WWI, 454–463, 464–473
Franklin Book Programs, 645
Hanlin Academy, China, 431–441
Imperial Library, China, 404–420
Iraq War, 2003–, 730–745
Japanese libraries, 551–569
military hospitals, 536–550
Modern Library Series, 583–596
Nazi book burnings, 523–535
Notre Dame de Grace Library for Boys and Girls, Montreal, 597–608
Paris Commune of 1871, 442–453
Prussian State Library music collection, 651–664
public technical libraries, UK, 474–489
South Africa, 698–715
Tianyige Library, China, 421–429

War effort (non-military)
German Freedom Library, 526
Japan, 557–560
military hospitals, 536–550
Modern Library Series, 586–588
Paris, World War II, 495–496
San Diego Public Library, 570–582
St. Louis Public Library, 459–460
War Information Centers, 571–572
War Information Service to Libraries, 571
War Production Board, 587
Washington (state), 992

Water motif, 423–424
W3C. See World Wide Web Consortium
Web Accessibility Benchmarking (EU, WAB), 958
Web Accessibility Initiative (WAI), 964
Web-Braille standard, 801–802
Web browsers, 955
Web Content Accessibility Guidelines (WCAG), 956, 965, 969
Web developers, 966–969
Web Feature Service (WFS), 301
Web Map Server 1.0 (specification), 289
Web portals. See Virtual libraries
Web sites. See Internet and Web; URLs
WebXact (validation tool), 964
Weick, K.E., 5
Weightman, A.L., 204, 211, 212
Weiss, C.H., 103–104, 112, 117
Welfare states, 539
Wensu Library, 366, 387, 392–401
Wentworth, Patricia, 926
West Africa, 858
Western Electric, 20n
Western influence
Boxer Uprising (1900), 432–435
Japanese librarianship, 561
Libraries for the Blind Section (IFLA), 870
moral issues, 748
Western literature, 634n
White, M.D., 39, 144–145
Whitlock, Brand, 466
Whitman, Walt, 589–590
Wide-area networks, 854
Williams, Edith, 460–461
Williamson, J., 204, 211, 212
Williamson, Kirsty, 90, 93
Wills and inheritance, 423
Wilson, K., 213
Wine, 982
Winning, M.A., 209–210
Winter War, Finland, 1939–40, 537, 541
Wisconsin
geographic information, 242–243
Wisconsin Land Information Program (WLIP), 243
Wise, Stephen, 531
W.L.D. Johnson Sr. Branch, Houston, 673
Wojewodzki, Catherine, 356
Women
  information seeking research, 89–93
  military hospitals, 542
San Diego Public Library, 580
Woodlands Community Resource Centre, South Africa, 707
Work productivity, 20n
Workflows. See Library processes
Working class, 487n
The Works of Plato, 589
Workshops. See Training and workshops
World Intellectual Property Organization (WIPO), 907–909
World leaders
  Buzek, Jerzy, 661
  Eisenhower, Dwight D., 371, 624, 629–630
  Gaozong, Emperor, 411
  Honecker, Erich, 657–658
  Laval, Pierre, 501, 507
  Qianlong, Emperor, 388–390, 425
  Roosevelt, Franklin Delano, 523, 524, 532n
  Thiers, Adolphe, 443
World Vector Shoreline Plus, 231t
World War I
  American Library in Paris, 491
  children and libraries, 454–463, 464
  public technical libraries, UK, 476–482, 483, 486
  University of Leuven destruction, 373
World War II, 365
  American cultural policy, 370–386
  American Library in Paris, 492, 495–509
  China, 394–395
  Japan, 561–565
  military hospitals, 536–550
  Modern Library Series, 583–596
  Notre Dame de Grace Library for Boys and Girls, Montreal, 599–600
  post-war reconstruction, 475
  post-war reparations, 654–655
  Prussian State Library music collection, 652–653
  Theresienstadt Ghetto Central Library, 513–522
  See also Holocaust; Nazi Germany
World Wide Web Consortium (W3C), 938–939, 941, 951, 956
Wright, Herman, 667
Writing skills
  blind and visually impaired users, 841f
  critical incident technique, 56
  journal submissions, 158–159
  life histories, 131, 135
X
XML (Extensible Markup Language), 941
Xue Jiwei, 426
Xue Jixuan, 413
Y
Yale University Library, 327–339
Yao Guangxiao, 391
Ye Mengde, 413–415
Yihetuan Movement, China, 432–435
Yin, R.K., 9, 13f
YMCA, Montreal, Canada, 600
Yong Le Da Dian (encyclopedia), 434–436, 439n
Yongle Encyclopedia, 391
Young adult users, 57–58
Yugoslavia, 363
Z
Zaitsev, Vladimir, 720, 726
Zhang Xueliang, 394
Zhang Yuanji, 426
Zhu Yun, 390
Ziervogel, Christian, 701, 702
Zimmerman, C.A., 266
Zionism, 531
Zissa, Zofia, 656