
Resource Discovery: Catalogs, Cataloging, and the User

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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 format 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 users 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 impaired community?

Finding the answers for VIPs is not simply a quest for catalogs confined 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);³ 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, cliché 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 Nimes businessman, she runs into an old enemy; she is into something much larger than anticipated" (*Death and Co* by David Brierley).⁴

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/>.
3. See <http://www.collectionscanada.ca/iso/tc46sc9/wg3.htm>.
4. The example summaries in the above paragraphs were taken from either Revealweb records or entries on the Amazon UK Web site.

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