TESTLAB — Testing Electronic Systems using Telematics for Library Access for the Blind: a project under the TAP Libraries Programme

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Even with all the production of alternative format books visually handicapped readers can only access about 1% of everything that is published. The TESTLAB project sets out to test ways in which blind and visually impaired people can have access to catalogue information and documents which can be read by means of the computer. This article describes some of the trials that are taking place across Europe.

Background

Why should we set out to improve library access for the blind? When somebody on the AXSLIB-L list-server[1] asked recently, "What have the blind to do with libraries?" they got flamed by the many blind readers of that list. Blind and visually handicapped readers feel very strongly that they have a right to read the same materials that are available to the sighted. They also feel with full justification that they are currently discriminated against.

In some countries there are special libraries for the visually handicapped which produce books in Braille, enlarged letters or spoken onto tape. The UK is one of the better providers of these alternative formats with the Royal National Institute for the Blind (RNIB) and the National Library for the Blind being the main suppliers. Materials are sent directly to the readers' homes free of postal charges. One might think that this would solve the problem, but it doesn't. With all the capacity that these institutions can muster and with the support of many other smaller units the total production of reading material amounts to about 1% of everything that is published. Imagine going to your library and finding that 99% of the books are printed in a script which you cannot read. The chances that a visually impaired reader can find the book that they want in a form that they can read is very small indeed. And yet they have the same moral right as anyone else to be able to read what they want to read. Many countries, even in the developed world, have nothing like the level of supply that one can find in the UK.

In 1993 the Expansion of European Library Services for the Visually Disadvantaged (EXLIB) project started under the European Commission Libraries Programme. This set out to investigate the level of library access available to the visually handicapped and to develop models for library services which could meet the needs of this client group. The final report[2] indicated the need for practical experiments in providing direct access to public libraries. The conclusions were based on the increasing availability of catalogue access through computers and the growing number of electronic documents which could be downloaded. That final report expressed the strongly held views of many visually handicapped users that the computer could raise them to something approaching the status of the sighted readers. A follow-on project was proposed to the European Commission under the title of TESTLAB and this commenced work in the autumn of 1996.

Before describing the work of TESTLAB it is necessary to examine a couple of issues.

The community of visually handicapped readers has a demography which does not match society at large. There are a relatively small number of young blind people, born blind or who acquired blindness early. The numbers of visually handicapped people increases with age, through degenerative conditions and through accidents. As one moves up through the age ranges there is an increasing proportion of visual impairments. To give an indication, in Denmark more than 75% of the visually handicapped are older than 75 years. This pattern is reflected in most countries. We are living longer so there will be more elderly visually handicapped people. Those with some residual sight may be able to work with enlarging aids such as magnifying glasses or with large print books. Many more will opt for spoken books on tape cassettes. Very few elderly people (even those who acquire their blindness in their middle years)

appear to have the capability of reading Braille. So their choices are limited. Those who can read Braille have extreme difficulties. A standard dictionary which sits on your shelf as a nice fat volume may take up several meters of shelf space in Braille. Imagine what this is like for a student with a range of text and reference books. One cannot scan them for the item sought. The pages have to be read just to find out that there is nothing of interest. It is slow and very demanding.

For a small number of these readers the computer is the obvious answer to some of their needs. Visually impaired computer users can read the text from the screen with either transitory Braille — an apparatus which sits under the keyboard and presents the line of text where the cursor is at that moment in Braille — or through synthetic speech (not easy to listen to for long periods). If the reader has some sight a screen enlarger can be used which allows a few letters at a time to be displayed. As time goes on there will be more and more people acquiring visual impairment who have experience with computers and who should be able to adapt to speech synthesis, so the user group is likely to grow quite quickly.

As always there is a down side. The production of a book in either Braille or spoken form costs up to 30 times the cost of the original in real terms (and we will leave the question of diagrams, pictures, formulae, etc. out of the frame for this article). For a user to have computer access they have to have a computer, with a modem. Speech synthesis is not very expensive running to a couple of hundred pounds. Transitory Braille can be roughly reckoned on costing 10 times the price of the average (good) PC. Not something that every visually handicapped person can buy, especially since they may have lost their job in the process of going blind.

If every library catalogue were remotely accessible, then searching for information would be easier for both the blind and the sighted. But they are not. If it were possible to get the digital files for every book then many of the problems would be solved for blind readers and for the institutions providing alternative formats. But they are not. In fact it is surprising how many books never exist as a coherent digital file.

The Internet might be thought of as holding the answer for many of the needs of the visually handicapped, but it is very difficult and often impossible to read. As the pages become more graphically structured they become more and more opaque to the blind computer user who can only read text.

So where can libraries go from here? The EXLIB project noted that a number of countries were already moving some of the supply of alternate format materials away from the centralised special library into local public libraries. Denmark was one of the leaders in this movement; Ireland have declared the wish to involve public libraries; Portugal has alternative format materials in the national computerised catalogue as just another physical form designator; and the Netherlands is now actively pursuing the goal of local provision through public libraries, despite having the highest per capita provision of alternate format materials from its five special libraries. The motivation in all these cases is not simply to get the visually handicapped to go to the library. There would be little purpose in that. The blind cannot read either the card catalogue nor the normal computer terminal. They cannot browse the shelves. In fact for many early blind the concept of a library is difficult to understand. Have a look round your own library and see how much visual signalling there is. So why should the blind reader go there?

It is the belief of the proponents of opening up the public libraries to this user group that the library can offer a great deal more. It could provide a single adapted workstation which could be used by the many, thereby being cost effective. The library also functions as a multi-faceted information and social centre through which the reader can get much more than just a book. The most important resource that the library has is the librarian. It is this human interface between the handicapped reader and the information that makes it worthwhile opening up the services of the library. If by doing this one can raise the level of access to information from 1% to say 5% then the effort will have been worthwhile.

TESTLAB

TESTLAB is the acronym for the project Testing Electronic Systems using Telematics for Library Access for Blind and visually handicapped readers. The project will establish a series of practical trials in public and academic libraries whereby blind and visually handicapped readers can gain access to catalogues and digital documents in forms which they can read. These trials are a direct consequence of the EXLIB project, whose main results were proposals for implementation trials.

Since the EXLIB reports there have been several changes of national policy with regard to the visually handicapped and the provision of alternative format materials. TESTLAB aimed to take advantage of these and proposed to link to several activities funded by national governments to gain added value for this project and for these national activities. Adapted workstations would be installed in five countries and eleven libraries to allow blind and visually handicapped readers to access catalogues, networks, databases and electronic documents. Each trial has its own characteristics although all are based on the same premises.

Technical approach

TESTLAB sets out to conduct a series of experiments in five countries and to investigate the possibilities for development in a sixth:

- The Netherlands will build on an ongoing national project TOUCAT;
- In the UK 3 public and 1 academic library system will be able to link to a national catalogue, which includes data for alternative formats, and to an extended inter-library lending system for such formats;
- In Ireland the trial supports the policy of moving access to alternative format materials from the national centre, the National Council for the Blind of Ireland (NCBI), to the public library system;
- In Italy the workstations will be installed in a special library, a regional public library and in a small local library;
- Four Austrian universities will install workstations and link the libraries together. They will also have a link to the German database of alternative format materials.

In all cases the developments are based on user needs. An analysis will be made of the user interactions with the system and of the user responses (users include the librarians). Care will be taken to ensure that the evaluation criteria in each country have a common basis.

The main technical issues are:

- improved access to catalogue information;
- the ability to search networks and databases;
- improved access to documents, either as electronic files or through other conversion systems to produce electronic files;
- the delivery of these files to the readers for them to adapt to the form which is most appropriate (synthetic speech, transitory Braille, printed Braille, large print).

The consortium

The consortium includes:

- SVB, the Netherlands
- Centrum voor Gesproken Lectuur (CGL), the Netherlands
- RNIB, United Kingdom
- NCBI, Ireland
- Istituto David Chiossone, Italy
- University of Linz, Austria
- Polyplano Euroconsultants, Greece

Impact and expected results

TESTLAB will provide extended real experience in public and academic libraries of ways in which the target group can be given access to what the sighted take for granted. Not only will the project provide direct benefit to the users of the test sites but it will provide fully evaluated models to all other library systems as to how this group can be served. For each reader the impact could be considerable. Even the most active user of national institutions for the visually handicapped only gets access to one or two percent of what is available to the sighted under the current system. As these experiments will be firmly embedded in national and local library developments there is a higher possibility that the practice will become integrated into national policy and practice.

Results to date

The Netherlands

Much of the work in the Netherlands had already been done before the start of the project, supported by Government funding. Adapted workstations were placed in two university libraries and a public library with a link to a university library. For about a year the use of the workstations was monitored. In many ways the results were discouraging. In the two universities there was not much use made of the equipment, or so it seems until one realises that there are only three to five blind

students. The little use they made every week is much greater than the use of the library made by the average sighted student.

In the public library, despite a great deal of publicity in the region, there has been very little use of the adapted workstation. This is disappointing but need not necessarily mean that TESTLAB should not carry on.

The social conditions in each country clearly have a major influence. It might be that there is little need for the visually handicapped to go to that particular public library because of the level of support provided by the five libraries for the visually handicapped in the Netherlands[3]. There is a feeling that all that they have to do is lift the telephone and speak to a librarian at one of the special libraries. The Netherlands has the benefit of having three libraries for general literature, one for spoken magazines (which also provides 6 daily newspapers and some 400 magazines and journals online directly into the computers of the subscribing members), and one which is responsible for producing material on-demand for anyone following a course of study or who needs a book in the course of their work.

The UK

In the UK, TESTLAB has linked into the UNITY project in which ten of the twelve library regions have created a union catalogue of all the holdings of more than 400 public libraries. Accessible through an online service this shows not only the bibliographic information but also the shelf location (ie in which library a copy can be found). Over the same period the Royal National Institute for the Blind has been building the National Union Catalogue of Alternative Formats (NUCAF), which lists materials produced in Braille, moon script, spoken book, large letter or digital. These two are now being integrated so that a visually handicapped person can search the same resources as the sighted, learn if there is a version in a suitable format and then either order it or put in a request for conversion. The plan is to make this catalogue available through the provision of adapted workstations.

Manchester Central Library already has a special facility for the visually handicapped, permitting not only access to the catalogue but also scanning of texts, CCTV enlarging and reading through machines such as the Kurtzweil Reading Edge. Adapted workstations are also installed at a Manchester branch library and the central library in Preston. Though not formally part of the project, the University of Central Lancashire has also agreed to allow the use of its own special facilities as a test-bed for the project. The building of the catalogue system on such a large scale will give this trial a different perspective. The use of the stations will be monitored over the rest of the project which runs to October 1998.

Ireland

In the Republic of Ireland the provision of alternative format materials is in the hands of the National Council for the Blind of Ireland (NCBI). This institute is, like the RNIB, supported by charitable donations. Economies of scale mean that the level of new production is low. A decision in principle had already been taken to move the distribution away from the central institution and into the public libraries, so TESTLAB arrived at an opportune moment. Although that move to the public libraries has not actually taken place, adapted workstations are being placed in two Dublin academic libraries, Dublin City Library, Donegal County Library and the Public Library of Clonmel.

The NCBI has a distinct advantage in that although their own production is limited they can use the products of the rest of the English speaking world, particularly those of the RNIB and the two major American sources, the Library of Congress and Recording for the Blind and Disabled. In the initial phase of this trial the major problem has been constructing a catalogue of alternative format resources since the cataloguing methods of the various production agencies turn out to be far more diverse than had been anticipated. On the other hand encouragement is being given to the work by requests from several other libraries who wish to join the trial at their own expense.

Italy

Italy is a country lacking the sort of central institutions for the visually handicapped which typify other European countries. Production of alternative formats is fragmented and overall at a much lower level than in either the UK or the Netherlands. Integration of the visually handicapped into regular schools has weakened the position of the special institutions and has resulted in a rapid decline in the number of Braille readers. Evidence suggests that the level of computer use amongst the visually

handicapped is quite low and little use is made by the visually handicapped of either the public libraries or the special institutions.

Whereas the other trials are targeting relatively small groups of users to test the suitability of the TESTLAB approach, the Municipality of Genoa is attempting to reach a large audience. A publicity campaign has been launched to attract the estimated 1,000 visually handicapped people in the area to come to the library. Volunteer organisations will assist with the mobility problems. Workstations have been installed at the Central Library of Genoa and in the library of a smaller neighbouring town. In addition an installation has been placed in the library of the David Chiossone institute for the visually handicapped. The programme here focuses on introducing visually handicapped people to the facilities offered by the libraries through the computer. As the needs of the target group are less well defined than in some other countries much of the monitoring of the use of the libraries will be constantly fed back to assist the libraries to adapt to the user needs.

Austria
Alternative format materials for students in Austria are not provided by a central institution but by supporting institutions and some university libraries themselves. This fact makes it difficult for students to get an overview of which books are available. At the same time the establishment of an online catalogue will ensure that institutions providing transcription of study literature can be prevented from doing the same work twice and thus work more efficiently.

The Universities of Linz and Graz are the leaders of the Austrian action to ensure that visually handicapped students have optimum access to catalogue information and then to the required documents. Through installed workstations and network remote access students can search catalogues (not just of the Universities but also further afield). Requested items can be ordered or converted on the premises. The Universities of Salzburg and Vienna are also networked into the system and it is hoped to double the number of universities in the network. The number of students using the system will be small for the duration of the project, but it is through such careful building of a facility that a stable system can be offered to attract yet more visually handicapped students into higher education.

Greece
Instead of installing workstations, a costed feasibility analysis is being conducted in the Thessaloniki region. Assuming that there is little infrastructure for the provision of alternative format materials, this study will develop a model of how the region could provide services through its public and academic libraries.

Information

The preceding descriptions can only give a summary impression of the work that is being carried out across Europe in the TESTLAB project. At this stage we do not really know how effective this approach will be. It may turn out that easy Internet access to the same information is a better approach. We are probably not talking about a choice between one or the other but a mixture of both. The consortium members make certain assumptions and judgements about the importance of the librarian as human intermediary in such situations. These will be examined in the project.

Readers who are interested in this expansion of library services are cordially invited to visit the TESTLAB Web site at http://www.svb.nl/project, where all the reports are made available as they are delivered. Better still get in contact with the project partner in your country if there is one and see for yourself what is happening.

References

1. A list-server on library access for the handicapped

2. Available from the SVB Web site at http://www.svb.nl/project

3. See the EXLIB final report for a comparison of the levels of provision of alternate format materials in the different European countries

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