Document supply and interlending at UB/TIB Hannover

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A short survey gives general information on the tasks and responsibilities of the "Universitätsbibliothek and TIB Hannover". Serving as the national central library for engineering/technology and the basic sciences like chemistry, mathematics and physics, the UB/TIB is one of the European document supply centres. About 85% of the requests received are supplied as photocopies. Available equipment for photocopying is unergonomic and causes delays in delivery. New equipment and procedures are developed in cooperation with industry. While storage of publications on new media depends on activities of the publishing world, the trend in delivery of hardcopies from printed paper turns from letter mail to facsimile-fax transmission using science networks. UB/TIB is partner in the EC supported project EDIL that will facilitate document delivery between European document suppliers. The aim of all this is a new quality in "document supply" with short time delivery as a standard.

You may well ask, why a university library is a member of IATUL, and you will also ask what this other library, with such an unusual name like Technische Informationsbibliothek really does. For quite a number of you the UB/TIB is nothing new; but as some of you are new, or interested in details, and will visit the library during the tour to Göttingen and Hannover, I assume that a short introduction will give you a clearer view of what you may expect to see.

First of all, the university library (UB) is no conventional university library covering all aspects of science in teaching and study. On the contrary, it is a strictly technical library. The university dates back to 1831; so does the library. Only in 1968 did the Technische Hochschule become a Technical University; 10 years later, in 1979, the human sciences were added and thus there was no more a restriction to science/engineering. This last change, however, had no effect on the library, for a number of reasons:
the holdings were — and are — quite comprehensive, although concentrating on technical subjects.

The Technische Informationsbibliothek, founded in 1959, made this collection even more comprehensive by adding special material like reports and papers, conference proceedings and translations, published and even unpublished material, etc., etc., in all languages from German to Indonesian, from Russian to Chinese, from English to Japanese and the like, and from all over the world.

Both these libraries were, and are, a unit for local as well as supraregional or national, and even international, access.

For the library the responsibility to cover all these new fields in human science would have meant a tremendous task and an extension of scope and duties with no staff, no space, no money — or at least with insufficient support. Very soon after the expansion of the university the leading librarians in Hannover came to a decision that proved very efficient and has been fixed by a law. The responsibility for the supply of literature for the new departments was attached to the Niedersächsische Landesbibliothek, being an old and very good library with special emphasis on human science collections. Thus a basic collection was immediately available for the newly established studies and everybody has been happy since.

I have mentioned already the organisational unit of UB and TIB. While there is a very complicated budgeting arrangement, which differs widely between the two libraries, the services offered to local as well as non-local users are as simple as possible and include "document supply and interlending".

Local use is allocated to the university library; document supply and interlending is the main task of TIB.
Interlending is "Leihverkehr der Deutschen Bibliotheken" in German, and a well organized system for more than 80 years. The local and regional resources have to be tried first, and then a request may either circulate to, and within, the next region, or the request may be directed to one of the national special collections, supported by the German Research Society (DFG-Sondersammelgebiete), or to one of the four central subject libraries (Zentrale Fachbibliotheken). Books are sent on loan, photocopies of up to 20 pages are sent free of charge. This kind of "interlending" connects only large libraries with open access and is ruled by regional laws called "LVO-Leihverkehrordnung"; these rules have strictly to be observed. Although they are very logical they are less efficient with regard to the time needed for supply. Turnaround times are 3 weeks to 3 months, the median value of more than one month being the rule.

The central subject libraries, like TIB which is by far the largest of these, also accept direct requests from everybody and everywhere. This service is charged by TIB with DM 18,- for requests from all European countries, for photocopies of up to 20 pages. Document supply is made by photocopies to about 85% of all requests; with a median of 1,800 requests per day from outside, the result is an annual output of some 4.6 million photocopies (pages). This volume causes a number of problems and has lead to different technical, as well as operational, solutions. About one-third of the photocopies is produced on office copy machines. These machines do not allow the staff to sit while operating the machines and therefore no all-day, and no whole-day, working is possible. More than two to three hours operating time is not acceptable. Job rotation and part-timework are necessary and practised but are not ideal.
The other two-thirds of the photocopies are produced by first preparing a 35mm rollfilm on a step-and-repeat-camera with a special book-seesaw [Fig. 1]. The table of the seesaw is cut into two halves to press the left and the right part of a book separately, according to thickness, from beneath onto a glass-plate, thus saving the spine of the volume from damage. Staff are seated and ergonomic working is ensured. The disadvantage is the time delay: a microfilm has to be prepared, processed, re-enlarged (done automatically by four Tameran Autoprint 2.000 machines), and then the hardcopies are collected and dispatched.

For nearly twenty years TIB approached the producers of office copy machines for a machine which would combine the advantage of an office copy machine with its immediate output, with the ergonomic and comfortable operation, with the operator in a seated position at the book-camera. At last we have come nearer to our aim; two solutions to the problem have been produced in a prototype version.

The first one has placed a flat-bed scanner upside down and connected it with a book-seesaw and a laser printer for output. The book lies under a glass plate with the text facing upwards, and the table under the plate is automatically moving up and down after scanning. There is only a turning of the pages and the change to the next volume, no turning of heavy volumes for each page. The disadvantage is the restricted view on the open book, which is partly covered by the large flat-bed scanner box.

The second solution substitutes the film-camera with a scanner head of about the same size. The CCD-line scanner, with a special optic, has a high resolution and the laser printer output is quite good. The first machines have been produced for land registry offices in Germany and therefore still lack the book-seesaw equipment. This machine is produced by Kodak; TIB has contacts with Kodak, as well as with the
inventor of the scanner head, and is very much interested in the further development of the copier into a suitable library machine. There are negotiations with Kodak and a software developer on one side and the German Federal Ministry for Research and Technology for financial support on the other, to develop this photocopying machine into a system and to implement the system into TIB's daily routine (now: TIBQUICK II: Digital high-capacity copying and distribution system of TIB).

The system opens new prospects for document delivery we could only dream about hitherto. Because it is a digital-analog system it will be possible to store the image of a printed page and transfer it directly to the user, with a print made at the requester's desk, instead of preparing a hardcopy in the library and sending it by mail. Such a direct fax service can either use the present telephone lines or data networks. The present fax transmission of group 3 is still rather poor in quality, parts are often illegible, transmission is slow and costs are high. The last two factors prohibit a general change from supply by letter mail to electronic document supply, at least for the time being. But group 4 machines and ISDN, or file transfer on networks, will change the situation profoundly.

Electronic document supply is the subject of another project, with TIB as one of four partners: This is the EC project EDIL. EDIL stands for "Electronic Document Interchange between Libraries". The aim of this project is the file transfer of scanned documents, using the national science networks like WIN in Germany, SURFNET in the Netherlands, JANET in the United Kingdom, and RENATER in France. For the time being the problem is the connection of these networks, and the solution is the development of a GEDI Relay. The concept of this Relay was the result of discussions in the EC-sponsored Group on Electronic Document Interchange (GEDI) and was recommended at a presentation in Paris in 1991. The EDIL project commenced in
January 1993. The four partners are: BLDSC in Boston Spa for Great Britain, INIST in Nancy with Télésystèmes and MESR in Paris for France, Pica in Leiden for the Netherlands and TIB Hannover for Germany. FCCN in Lisbon will distribute the results of the project when it ends in the middle of 1995.

There are several technical problems, but the four partners are busy finding common grounds, for accepting ILL standards for requests and for selecting a delivery mechanism; E-mail, using X.400 protocols, is favoured by at least two partners. It is too early to talk about first results. One of the main problems for the project, however, is not a technical one but a legal: in the United Kingdom and the Netherlands it is not permitted to deliver a document, i.e. an article, electronically without a special agreement with the publisher. As there is no permanent storage of a paper to be transmitted, there seems to be no problem in Germany. The microfilm now produced as an intermediary is only substituted by a scanning and short-time storage mechanism, which may be compared with the drum in an office copy machine.

It is very odd that fax transmission, nowadays such a well-known and well-accepted technique, was invented 150 years ago by a certain Alexander Bain. He applied for a patent for this invention on the 27th of May in 1843, 33 years before the telephone. I stress this fact because an invention, a new technology, a new procedure, has to fit into an appropriate environment: cost, speed, technology, and, most important, user acceptance have to join into an optimum.

Generally libraries can act only in a very limited way. It is quite easy to be excited about the prospects of new media and how they may change the information world, the world of publishers, libraries and their users. But in spite of a continuous
progress in edp technology we are not yet far from the first experiments. The technology is still looking for its application. You will surely all be informed about ADONIS where full texts, complete journals, are stored on CD's. TIB Hannover was the German project partner. We experienced only very few advantages, but a number of disadvantages; for example, it is much more expensive than the conventional way. So we decided not to accept the commercial offer of ADONIS (with again new hard- and software). When I recently asked an internationally well-known German publisher on his opinion about ADONIS, he told me that Adonis was a man who died in his youth.

To put it in one short phrase: Fulltext storage is possible. Its restrictions, however, are still far too great for any basic change in the publishing world. Only when publishing in general has changed, will the future of libraries be basically affected.

Meanwhile electronic document delivery is still based on a hardcopy, a printed paper. Requests are changing slowly from conventional order forms to a PC input, either into an online order file at a host, with an automatic checking of a holdings file of a library and taking over the shelfmark of the periodical onto the order for an article from this periodical (as was realized in the project TIBQUICK by TIB and STN International in Karlsruhe) or writing the order into an e-mailbox (like TIBMAIL). The next step is online delivery of the requested document over the different science networks. At present delivery is to another library, later on it will be directly to the user.

It is of no use to hide the truth, slow document delivery nowadays suffers more from poor organisation, unnecessary delays, and dead times within our libraries than from delays in postal delivery. But if we succeed in developing a photocopying machine connected online to the end-user and a direct printout, there will be very few good excuses for retarded delivery.
At present the immediate answer to a search in an online database is compared with "weeks or even months for delivery of the original document". Each step in the procedures necessary to produce and to deliver a document that can be avoided, and which will be unnecessary in future processing methods and equipment, will bring us nearer to a general standard of a "short time delivery".

One last remark about a very attractive idea. Why should databases have references and abstracts only, instead of full texts? It doesn't need much imagination to see a searcher finding an interesting abstract, and on pressing another button being supplied with the full text. The problem is the volume of storage space needed, which is absolutely unimaginable for the layman and even for many information specialists. The UB/TIB has an annual intake of some 15 million pages of periodicals and serials. We have quite a number of well-working methods to find a requested article from this bulk of material. To store this material on one of the new media needs the input of additional data and an index for finding the right section, place or point on the storage medium. Calculations in a TIB project on the use of new media for document delivery have clearly shown that this indexing is about thrice as expensive as scanning the periodicals for storage on magnetic discs; this is expensive enough, especially as about 90% of all articles published are never requested more often than three times. This seems a good reason for information databases to leave the business of document supply to specialists like librarians.

The result of all these considerations and pilot projects is that there are quite a number of changes to be expected in the near future. These steps will be small but encouraging and surely help us to offer a much better service to our clients. The sudden and complete change for document delivery, the big bang, is hardly to be expected.

Constant improvements by feasible new ideas, however, are badly needed.
Fig. 1: Step-and-repeat camera with special book-seesaw
   a. Book put on the seesaw
   b. Book pressed by seesaw onto the glass-plate

Fig. 2: Book-seesaw with Kodak Imagelink "Book Scanner 200" and QMS 3225-2 Print System