Library Networks in Germany

Let me describe the development and the state of library networking in Germany with reference to an example. What I have in mind is a university or state library, common, straightforward, "middle-of-road", if you like. This library would belong to the group of about 100 libraries in re-united Germany. I hasten to add that my exemplary library is altogether fictitious and bears no resemblance to my own library, neither deliberate nor accidental. As P. D. James stated in the author's note to her latest novel: "In this novel only the past and the future are real; the present, like the people and the setting, exists only in the imagination of the writer and her reader". The book from which this quote is taken is entitled Devices and Desires[1]; it is not, as one may think, about library networking but on criminal proceedings.

There were, of course, library networks in pre-computer days; yet language use and networking mindedness have driven the very idea of uncomputerized networking almost completely out of our minds. As we shall see, however, there are various kinds of data processing prevailing in German libraries as well as variant levels of progress. With regard to the traditional objectives of library networking, bibliographic control and availability of publications[2], we find that in West Germany bibliographic control for material published after 1980 has been changed almost completely from conventional to computerized networking infrastructure; yet the ways and means to provide availability of publications remain to a very large degree based on conventional networks. In this paper, references to the history of library networking — as computerized networks — are to their development in West Germany.

Summarizing the state and rather short history of electronic library networking in Germany, we have to distinguish between

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- networking at local, regional, and national levels;
- bibliographic control of books on the one hand and serials on the other;
- enrichment of machine-readable library files to bibliographic and fact databases by providing access to relevant databases available on CD-ROM.

Step 1

What about the exemplary library? As with most other libraries of its kind, it embarked on the voyage to networking in the period of late-seventies to the mid-eighties. Before embarkation, the library had unfailingly been attached to one of the seven regional union catalogues in the former Federal Republic, roughly reflecting the structure of its eleven federal states, or to the regional union catalogues in the former GDR. As in other countries, union catalogues were primarily kept to facilitate inter-library loan. Particularly German, though, was a predominantly regional structure of union cataloguing. This structure, obviously related to the fact that responsibility for culture, education and research issues is assigned to the federal states, has been prevelent ever since the Federal Republic was founded. And even before re-unification of the two German states the principal administrative structure in the East was adjusted to the Western model by creating five federal states. As we shall see, this regional pattern is still playing its part in issues of library administration and nationwide library planning.

The library took its first step to library networking, indeed to library automation,

when its regional union catalogue in card form was replaced by a database. This applies to books, not to serials, which we will come to later. In 1980, the Deutsche Forschungsgemeinschaft (German Research Council), masterminding the structures and project lines of library development in the West, published a set of recommendations on regional cataloguing co-operatives and regional library centres[3]. From the beginning, the regional pattern was in contrast to any nationwide options. The new approach to cataloguing and the employment of new technology over the regional framework was necessary within and suited to conventional methods, but was ultimately determined by the federal political structure of West Germany. Although this model of several regional databases was expected to be com-plemented, at a later stage, by merging the regional data holdings into a national, cumulative database, it seems that the political aspect at least delayed the pursuit of networking by technologies available and feasible even at that time.

For the individual library, choosing a co-operative was not entirely voluntary, to put it carefully: this not only refers to financial aspects, having in mind that funds necessary for staff and machine investments would only be provided if a library was willing to comply to the networking structure. More significant was the fact that the regional structures certainly did not leave the individual library any choice which co-operative it should join. There would have been other factors, beside the regional issue, to be considered by the libraries if they had been entitled to choose: hardware and software issues, bibliographic and cataloguing standards, the size and growth of the database, price of COM catalogues or magnetic types. Compared to the utilities in North America, economic issues apparently did not play such an important part in this country at the time co-operatives were established.

Once the library had embarked on the

networking route, cataloguing was transfered to share relevant data stored in a central, regional database. Data to be shared did not only include those of neighbouring libraries, but also potentially required files comprising data from the Deutsche Bibliothek, in some cases also the British Library, and in a single case from the Library of Congress. Needless to say, the network was star-type and the hardware connection was dumb terminals to mainframe via dedicated telecommunication lines. Shared cataloguing of this type was limited to descriptive, formal cataloguing; subject cataloguing being only recently integrated in three regional co-operatives.

Changing to a computer or joining a network overturned rules, formats and processing of descriptive cataloguing and introduced the public to COM-catalogues, yet it had almost no immediate consequences to other branches of library administration, notably acquisitions. As for the COM-catalogues that usually replaced card catalogues in the course of the library's turning to EDP, for more than a decade they remained the only phenomenon visible to the public that the library had actually changed its cataloguing routines.

Step 2

What about the second step of the library towards networking? After considerable efforts to get accustomed to the new co-operative cataloguing circumstances, attention was drawn to the following questions: how could routines of library administration be integrated into a local library system and interfaced to the prevailing formats and procedures of descriptive cataloguing? How could OPAC research and implementation be stimulated? Again, in 1986 the Deutsche Forschungsgemeinschaft set the stage by another set of their influential recommendations, this time on the development of regional co-operative systems and its effect on the creation of

local networks[4]. The DFG also financed a large scale pilot project on OPAC development in the late eighties[5]. Unfortunately, OPACs were never as widespread as in US, UK, Dutch or Scandinavian libraries. About 20 university or state libraries presently provide online public access to their files, complete or in part. Those who have an OPAC do provide access via campus networks and/or the Wissenschaftsnetz (WIN), the German nationwide x.25 research network.

At this time, some libraries have actually managed to integrate almost all library administration routines into an encompassing system, either designed inhouse (e.g. Bielefeld, Konstanz) or bought off the shelf, more or less turnkey (e.g. Heidelberg, Oldenburg)[6].

More typical of local library networking in Germany, however, is a state where integration of various computing applications remains to be achieved. Some fields of work presently being addressed in the urgently required integration of EDP applications in German libraries are:

- circulation control systems, which are used in almost all German libraries (in the West), and the library's local bibliographic file;

- PC-based acquisition management, to which many libraries turn, and co-operative cataloguing files, to "upload" records used for acquisition purposes, including records from CD-ROMs containing national bibliographic files, into the regional cataloguing file in which the libraries co-operate;

- end-user CD-ROM searching in a number of bibliographic databases and library files on local, regional and national level;

- systems of document retrieval and systems of direct document ordering and supply.

There is, certainly, a mushrooming of

computing facilities and applications in German libraries. What clearly matters now is integration. This is all the more urgent since many universities and their computer centres have invested heavily in local area networks in recent years. Most typically, Ethernet was implemented. Access to WIN is common. In recent years, several million Marks were spent on two programmes devoted to computer equipment in students' as well as scientists' working environments in universities, the Computer-Investitionsprogramm (CIP) and the Wissenschaftler-Arbeitsplatz-Programm (WAP). Librarians are facing pressure if they have to explain why it possible for almost every scientist to enquire about books in libraries all over the world via WIN or IXI, but why it is simply impossible to check from a campus office via the local area network whether a book is actually held by the same scientist's own library.

Step 3

Integration is to be expected in step three which the library is either about to take now or will have to take in the near future. For the DFG, in their third set of recommendations published in 1990[7], critically examined the heterogeneous state of library automation and networking in this country and virtually limited the future perspectives of integrated library systems to two options enjoying equal preference: SNI (SIEMENS/NIXDORF) and PICA. Either system is intended to serve as an infrastructure to a regional system and to its corresponding local systems. This will certainly pave the way to greater homogeneity and it will hopefully reduce the costs, investment and maintenance. Both SNI and PICA have strong supporters, for SNI is implemented in Bavarian libraries, and PICA is going to be implemented by the Deutsche Bibliothek as well as the co-operative of Lower Saxony (including Saxe-Anhalt). There are also plans to co-operate with PICA libraries in

the Netherlands. Greater homogeneity will also contribute to another aim of the latest DFG recommendations: the merger of regional cataloguing co-operatives finally reducing their number. (I would not like to predict the reduced figure, though.) In this context it is interesting to note that the hitherto strict regional pattern has already been modified, for each of the five federal states in East Germany did not venture to build up its own regional system, but linked its library networking activities on the regional level to one of the networks already existing in the West.

Stricter guidelines are quite easily explained by the necessity to concentrate financial resources. For it will be unavoidable that considerable sums originally earmarked for library automation in Western libraries will be diverted to libraries in the East. It may suffice to recall that a number of libraries in the East are still housed in badly kept pre-war buildings, that library automation was almost totally absent before re-unification, and that complete new monograph and serials collections in certain disciplines have to be acquired (economics, law, politics). This will indicate why ambitious projects, drafted for libraries in the West before re-unification was even thought of, are very likely to be delayed. This will apply, first of all, to retrospective conversion on a nationwide scale[8], but also to implementation and enhancement of integrated library systems as well as local area networks.

All financial constraints notwithstanding, however, and drawing the politicians' and university administrators' attention unmistakeably to the requirements of information provision in a rapidly progressing environment, the DFG recently complemented their 1990 recommendations by a set of requirements concerning the scope of local library systems: apart from almost "traditional" modules such as acquisitions, cataloguing, OPAC, circulation and budget control, it is interesting to have explicit statements on

functional requirements on modules providing searches of external databases and inter-library loan and document delivery: with library databases documenting holdings on the local, regional and on the national level, future local library systems are requested to provide end-user searching via the library's OPAC, providing access to files on all three levels, offering direct order via inter-library loan plus document delivery (if feasible) directly to the searcher's work station[9].

Step 4

Looking at the two levels of library networking in Germany (if only its Western part), you may ask: what about the national one? To answer this question we have, quite surprisingly, to distinguish between books and serial publications. More surprisingly even, a national union catalogue of serials was begun to be compiled by the Deutsches Bibliotheksinsitut (DBI) in Berlin in the seventies and made available as a COM catalogue (Zeitschiftendatenbank). It has grown steadily and turned out be a great success.

As for books, the situation is quite different. The last attempt at a national union catalogue had to be abandoned at a very early stage during the second world war. Afterwards, there were occasional attempts to revive the idea, but they did not lead anywhere. With the emergence of computerized cataloguing, the DBI cumulated the various regional files into one database, creating the Verbundkatalog maschinenlesbarer Datenträger (VK), as it is somewhat clumsily called. Editions in COM were published in 1982, 1986 and 1992. The latest edition comprises 1,398 fiche, listing 9,424,147 titles with 17,665,557 holdings. The file is not yet accessible online to librarians for cataloguing purposes, which would be extremely helpful for retroconversion. The production of the VK was hampered and delayed by several problems: there were problems in

cumulating the data, revealing incompatibilities in the cataloguing formats and practice of the regional co-operatives. The internal cataloguing formats had to be interfaced to the Maschinelles Austauschformat für Bibliotheken (UAB)[10], the exchange format for German libraries before a union file could be produced.

Step 5

To take look into the future: the classical objectives of library networking clearly show the standardisation and research work being done in German libraries: bibliographic control and national format (MAB), availability of publications, dataflow and telecommunications[11].

As for cataloguing formats, there is the MAB-Committee convened by the Deutsche Bibliothek, which is also, on behalf of IFLA, the focal point of developments concerning UNIMARC. In this context, the continuous work on nationwide authority files must be mentioned, for instance on corporate names, subject headings, authors' names. Brief reference must also be made to relevant projects in German libraries:

- networking between a library (Stadt- und Universitatsbibliothek Frankfurt) and a number of booksellers on the basis of EDIFACT (Electronic Data Interchange for Administration, Commerce and Transport), employing EDIFACT-subsets to exchange quotes, orders, order responses and invoices; while limited to German booksellers in the first phase (1989-1991), the project has by now been promoted to an international level by involving libraries from the Netherlands and Great Britain respectively and booksellers from those countries as well as Italy; the project is being supported within the LIBACT-Program by the European Communities;
- networking of a data base host (STN: Scientific and Technical Information Network at the Fachinformationszentrum

Karlsruhe) and the Zeitschriftendaten-bank (Berlin), documenting journal holdings in German libraries; document retrieval and ordering become feasible under one command language; this is an example of applying the OSI SR-protocol (Search and Retrieve); other examples would include support of interfacing modules at an individual library level (e.g. OPAC and circulation control), support of interfacing modules in various libraries as well as on different levels (e.g. regional cooperative and local circulation control);

- networking of various libraries for inter-library loan purposes, applying the OSI ILL-protocol: document retrieval, ordering and delivery (if feasible) are done within the research network WIN; a national project is underway at Konstanz University Library; an international one, involving the Technische Universitätsbibliothek Hannover, PICA as well as British and French library organisations, is also being supported by the European Communities under the name of EDIL (Electronic Document Interchange between Libraries.

University and state libraries in Germany as well as the regional library centres and national service institutions such as the DBI are facing the task of joining the sundry computer applications into a coherent, functional and efficient network. The task is, in fact, twofold: for it involves the strengthening of both local systems and the national level. The local library system, being integrated in the university network, will have the OPAC at its centre, with server functions to circulation and acquisition routines. The national level must also be supported, because the VK will only be a useful tool if it is available as an online file via WIN, to which the cataloguing co-operatives are changing. This pertains both to cataloguing, current as well as retrospective, and to inter-library-loan

purposes. Recalling the exemplary library once more, the future is about to begin, concerning both the local system as well as its integration into a functional framework on the national scale. Over the next six to eight years the library should be getting there.

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