Data processing applications in libraries in the Federal Republic of Germany

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When a foreign visitor goes on a round trip of the Federal Republic of Germany in order to gain a survey of the present situation in library automation and to gather information about the concepts and plans existing, he will be probably impressed but more likely confused by the great number of different solutions attempted when returning to his country. This applies also – or even especially – when he has managed to visit all important institutions and to collect all relevant information. Such a rounds trip or also a pure state-of-the-art report can only convey a momentary impression, as it cannot reflect the complicated process caused by the most different facts of influence that lead to the present results.

Among the most important facts of influence are the historical, political, organisatory, economic and technical framework conditions for library automation. An analysis of the present state of development is additionally complicated by the fact that these facts of influence are continually changing, either weakening or strenghening each other, as time goes by.

The developments in the Federal Republic of Germany, therefore, also do not adhere strictly to a plan once laid down and centrally applied from a certain date but they are based on a large number of plans which were materialised at different times, partly complement, partly also contradict each other, and are in a continous process of progress, whereby the chances for co-ordinated action are improving with growing experience.

Roughly simplified three phases of library automation can be distinguished in the Federal Republic of Germany (with flowing transition)

- Introduction of isolated solutions in individual libraries, prelimary plans for networks on a regional and national level.
- Intensive planning to set up regional library networks, relatively isolated therefrom setting up and continued development of central

services on a national level, definition of the individual library as participant of a network without any own electronic data processing capacity worth mentionning.
- Efforts for co-ordination and technical as well as organisatory co-operation between regional and supra-regional centres as well as member libraries, whereby electronic data processing capacity is made available on the local level for tasks which were originally to be carried out by regional or supra-regional centres.

At present we are in the last named phase and here, like in the time prior to it, it will strike the attention of anyone observing German development what wide room was and still is given in the professional discussions to the question of assigning the different functions to the local, regional or supra-regional level.

The special emphasis being placed on this problem sphere is probably caused to a large extent by the development of German librarianship as a whole and by the present political conditions.

Most of the libraries and networks in the Federal Republic are being financed and run by the public service. Hereby, the strongly federalistic form of government of the Federal Republic is reflected in the structure of librarianship. Only a few of the libraries are directly financed and run by the Federal Government. The greater part of the universal research libraries are within the responsibility of the individual Federal States in which they are situated. Principally every Federal State is at liberty to shape its cultural and thereby also its library policy in its own competence.

The cities and communities have the same liberties when providing and running public libraries. Contrary to other West-European countries, they are not obliged by law to run a public library according to certain minimum standards. The impulse given by some Federal States by financing new buildings or the primary holdings of public libraries in the cities of their states is also steadily decreasing with the reduction of this sponsoring.

Is is probably due to this splitting of responsibility, but even more to the library-mindedness in Germany and the historical development connected thereto, that a marked separation between research libraries and public libraries has resulted, which has only been at least partly overcome in the last 15 years.

A distinct decentralisation of the voluminous and also valuable library holdings is connected with this federal structure and also with the history of that part of Germany which today comprises the Federal Republic. The Federal Republic does not have a national library, or in other words, it has

divided the functions of such an institution among three large libraries. Such a structure on one side and the requirements for an effective supply of literature on the other side make it essential for all libraries and library institutions to cooperate closely. This cooperation takes place in a system which grew for decades, supported by recommendations, agreements and correctly aimed financial support, the "system of supra-regional literature supply".

This system is based on the following principles:

- It is the duty of every library to cover the basic demand for supply of literature locally.
- Further demand is primarily addressed to libraries of this region, then to the libraries for special fields of collection and to the central special subject libraries. The libraries for special fields of collection sponsored by the Deutsche Forschungsgemeinschaft (German Research Society) with financial support, are held to collect as much home and foreign literature as completely as possible and to supply it also supraregionally. The central special subject libraries, generally financed jointly by the Federal Government and the Federal States, have the same duty for their fields of special subjects (at the present time these are medicine, technics and natural sciences, farming, economics).

In such a system of resource sharing interlending has a very important function. It cannot be regarded as an additional burden but is part of the system itself. An effective literature supply needs an efficient interlending system. This again is not possible without good reference instruments and an effective library organization. These requirements necessarily set the highlights of EDP application in librarianship.

In the system just described there does not exist, therefore, any central responsibility for librarianship in the Federal Republic and as a result no institution which can enforce planned projects by regulations and provide the necessary funds for this purpose. However, there is – especially when setting up and running efficient EDP systems – the necessity to co-operate, to plan and realize enterprises which individual libraries or individual Federal States cannot accomplish on their own. Such tasks need institutions which can extend their work beyond the borders of the individual Federal States, which are in a position to level out opposing interests, which can develop solutions for the problems out of their own resources and obtain funds for such a purpose. In the field that we are interested in at moment it is die Deutsch Forschungsgemeinschaft (the German Research Society), der Deutsche Bibliotheksverband (the German Library Association) and das Deutsche Bibliotheksinstitut (the German Library Institute) who are dealing with the application of EDP, who are trying to find common solutions,

sponsor extensive development projects and ensure that the results of the projects are later on put into practice.

The first steps to introduce EDP to libraries were made at the end of the sixties. Here cataloguing and lending circulation stood in the foreground. Software suitable for these purposes was not available. Programs were produced in partly very costly individual development projects. They were mainly concipated as offline systems, and were operated in the computer centres of the Universities. Very soon the disadvantages of theses systems became evident:

- Data either could not be exchanged or only with considerable difficulties
- The programs could not be applied by other users without great difficulties
- The priority of the libraries in the central university computer centres was too low.

An attempt was made to overcome these negative tendencies

- by developing standard rules for alphabetical cataloguing
- by an uniform exchange format for catalogue data
- by sponsoring centrally the development of software and its first application
- by building up central services and standard files for cataloguing.

The National Serials Data Base

Comparatively early, actually at the beginning of the seventies, these efforts could be materialized in building up the supra-regional serials data base (Zeitschriftendatenbank – ZDB). This serials data base became necessary in order to have an efficient central register for the serials and journals especially important for research activities which were spread all over the Federal Republic, and to cut down radically the lengthy periods of delivery in interlending. The assignment of building up the data base was given to the Staatsbibliothek PreuBischer Kulturbesitz (Library of State of the Prussian Cultural Foundation) and the Arbeitsstelle für Bibliothekestechnik (Instituto for Library Technology, which today is part of the German Library Institute) in Berlin and financed by the Deutsche Forschungsgemeinschaft (German Research Society).

The serials data base rapidly developed from being solely a record for lending purposes to a network for the cataloguing of serials. More and more participating libraries used the possibility to have their own catalogues produced via the serials data base, and the high costs invested right from the beginning in the bibliographic quality of the data base very soon paid

for themselves. Right from the very first the rules for alphabetical cataloguing ("Regeln für die Alphabetische Katalogisierung", RAK) were applied. Through the intensive use of the serials data base and the detailed and partly very strict conditions for participating in the data base standardization in cataloguing of serial titles was achieved.

The following data shows the present state of performance of the serials data base:
The serials data base comprises 490.000 titles
1,8 million holdings notations from more than 1000 libraries
Over 40 direct and permanent network participants
Annual production: aproximately 300 catalogues for individual libraries or regional networks
Twice a year: Issue of a complete microfiche edition.

The cataloguing version of the serials data base is at the present time still being operated as a mixed online/offline system; the basic software system having been developed by the German Library Institute. Developments are being worked on for a purely online system for cataloguing, which is to replace the present system from the end of 1989.

Parallel to the serials data base for cataloguing purposes also the online data base has been in routine operation since 1983 as a sole holdings location instrument for lending purposes. In this version of the serials data base online searches for titles and holdings locations can be carried out via a very comfortable retrieval system.

Since the beginning of 1986 online ordering is also possible with in this database, which is connected to 7 important libraries at the present time.

The Joint Authority File (GKD)

During the creation of the serials data base but also generally during the introduction of the new rules for alphabetical cataloguing it very soon became clear thet recording the names of corporate bodies would cause particular difficulties. Specially here it was necessary, when building up networks and exchanging data, to set down standards for recording the names and to offer them as a central aid for cataloguing of corporate bodies.

The Staatsbibliothek PreuBischer Kulturbesitz in Berlin, the Deutsche Bibliothek in Frankfurt and the Bayerische Staatsbibliothek in Munich, therefore, decided to create the joint authority file (Gemeinsame Körperschaftsdatei, GKD) with the help of the Deutsche

Forschungsgemeinschaft; the German Library Institute doing the electronic data processing.

This authority file contains approximately 290.000 records of names at the moment, can be supplied in a microfiche edition, is available in machine readable form and can be supplied via the online data base.

A standard file for authors' names is being built up at the German Library Institute at the present time. It is to simplify recording of older personal names, and thus will be of vital importance for retrospective conversion.

Regional Networks

With the presentation of the "Empfehlungen für den Aufbau Regionaler Bibliothekszentren" (Recommendations for Establishing Regional Library Centres) of the Deutsche Forschungsgemeinschaft at the end of the seventies, the vital impulse was given for the widespread co-ordinated implementation of electronic data processing in library networks. This concept provides for seven regional centres in the interlending regions already existing for quite a number of years. Their chief aim is to build up network catalogues according to the principle of shared cataloguing. It is intended thereby to simplify cataloguing via online systems, to register and index the library holdings of the region, and thus to speed up lending circulation considerably. The Deutsche Forschungsgemeinschaft recommended, that close co-operation and splitting up of the work should be practised when establishing and running these centres. She hoped for reduced costs and simplification of the traffic between the centres by common software developments.

This plan of development has been followed on the whole. All the seven centres are being established, although the state of realisation of the longtime objectives varies considerably. It covers all variants possible:

- Plans, without substantial steps towards their realization having been taken
- Offline systems which are being converted into an online network
- Online systems which are already providing some of the intended services.

In none of the centres the development activities have been entirely concluded; none of them has yet reached the envisaged final stage of completion.

Inspite of this, the recommendations of the Deutsche Forschungsgemeinschaft have reached their most important goal: They could convince the supporting bodies in the process of forming their opinions and making their decisions which was influenced by the complicated political structures, and inspite of the tight house-hold budgets reach a long-term financing of investments and running costs.

The expectations nourished at the beginning, that uniform solutions could be reached concerning the organisation and technical equipment for as many networks as possible, did not become true. So there are now three software systems being used for running the networks, and it is already now perceiveable that the development and the form of application of the most widely spread system, is being accomplished in different ways.

The hardware applied comes from Siemens and IBM. Some of the network centres are planning to transfer parts of the functions allocated by the original proposals of organization to the centres (loan control, acquisition processes, control of serials received) to the libraries, but all keep to the idea that online searches should be carried out in the network pool of the centre and that the compilation of the individual library catalogues should be done by the centre, catalog cards and microfiche catalogues being the most common forms of publication.

The differences in organisation and working methods of the network centres mentioned and others not separately specified here (such as type and number of the admitted libraries, application of cataloguing rules, communication between library and centre) cause no problems as long as they only affect the region concerned. The difficulties begin there where questions connected with the co-operation among the centres and between regional centres and supra-regional institutions are concerned.

Though the Deutsche Forschungsgemeinschaft envisages in its aforenamed recommendations close co-operation between the individual network centres and central institutions, it was at the time the paper was passed not in a position to propose concrete technical and organisatory solutions.

It is clear, that a connection among the centres, i.e. by exchange of data and by automatic switch through of retrieval enquiries, is getting more complicated as the differences in the user software, the operating systems and the hardware are pronounced, as it is not even possible without greater problems to connect computers, of the same construction type and having the same user and system's software.

Union catalogue of machine-readable catalogue data

At about the same time when plans were made for the regional library centres considerations were given how to provide an effective register for lending circulation also for monographs before the envisaged centres were in operation. Already before the regional centres were established a larger number of newer university libraries had machine-readable data in their possession, which were normally issued as microfiche catalogues, and which in this form could no longer be inserted in the traditional central catalogues and not as yet be taken over by the regional centres. Therefore, the idea was born that by pooling the existing individual catalogues, a voluminous single catalogue was to be produced which was to serve chiefly for interlending purposes.

The German Library Institute was assigned to carry out this project and the funds for the production of the first edition were again provided by the Deutsche Forschungsgemeinschaft.

The newest edition of this catalogue, comprises, 4,1 million titles. Since 1987 the database is open for online search. I will speak about plans for further extension of the union catalogue of machine-readable data later on.

Development Tendencies

The developments mentioned so far were deliberatly presented chronologically parallel to each other in order to make clear in which sequence and with which intentions the different major projects went through in the afore mentioned second development phase.

The more concrete and detailed these developments became, the more the unsolved questions became distinct and the problems clear which would arise from these competing projects if no corrective intervention took place. Following an intense professional discussion and a detailed analysis of foreign, especially US-American experiences and plans, the following development tendencies for network systems and participating libraries were derived:

- Network systems with a high bibliographic quality will become increasingly important for cataloguing and for steering lending circulation.
- Registers of the library's own holdings will be available at the respective library for information purposes. Independant library systems for catalogue retrieval, acquisition, circulation control will prove successful, the network centres serving them as suppliers of data.

- Online user catalogues will replace card indexes and microfiche catalogues. As the search here often starts with a key word, subject indexing, which so far has been neglected by central services, will gain increasing importance.
- The users will expect an online catalogue for the entire library holdings. As a result efforts for a fast and economic retrospective conversion of traditional catalogues are urgently needed.

From these statements and the present state of development in the Federal Republic the following questions arise:

- How are the functions to be divided when national systems, regional network centres and individual libraries co-operate?
- How can differing formats, varying interpretations of rules, different character sets, different software procedures be dealt with to prevent negative effects?
- How can a smooth connection between all participants be maintained permanently?
- How can problems concerning retrospective conversion be solved?

The answers to these questions must take into consideration the potential technical developments, the structures existing at present, the investments already made and the economic skeleton conditions. At present the following solutions are taking shape:

1. Functional dependance between the local, the regional and the national level.

The local level will comprise the following functions:

- the library system in a local (e.g. university) network with an online user catalogue as core and sub-systems for circulation control, acquisition, serials control.
  Connection to the public network should be possible.

On the regional level (regional library centres) network systems serve as

- data ressources for current cataloguing of monographs
- holdings location and steering instrument for circulation control

with possibilities for connection to other network systems.

The national level (Deutsche Bibliothek with the national bibliography, the serials data base, the union catalogue of machine-readable catalog data, the joint authority file, the authors' names file) serve as

- data ressource for cataloguing of series
- holdings location and steering instrument for supra-regional lending circulation

– data ressources for retrospective conversion

And must also have facilities for connection to other network systems.

This allocation of functions is also based on a consequent use o outside services, on a spreading of costs by using all the possibilities which are to expected from the communication technique at present and in the future. Here also it is intended, if possible, to make use of already existing networks or those shortly to go into operation, e.g. university networks (as local area networks) and the German research network (a network of university computer centres).

This network connection can only be achieved via OSI (Open Systems Interconnection). It will meet with considerable difficulties because the software used at present does not as yet have the necessary interfaces, First projects for interconnection of existing systems are starting next year.

2. Subject indexing in network systems

At present there are a great number of subject indexing systems being used by the German libraries, their number almost corresponding to the number of libraries using them. After efforts to bring about standard classification failed in 1979 it was now recently possible to finish a new set of rules for subject indexing (Regeln für den Schlagwortkatalog, RSWK). It is expected that these will at least be observed in the libraries belonging to a network. Since 1986 the Deutsche Bibliothek is also supplying the key words in the national bibliography in accordance with these new indexing rules, so that a valuable central service is being rendered for the new German language publications, which can be made use of by the networks.

Concerning subject indexing of foreign monographs there are different solutions under discussion at the moment, but with all of them a central service of the Deutsche Bibliothek is intended. Inspite of all the progress made in this direction the problem of subject indexing of the already existing holdings in regional and national network systems remains open. Discussions in this direction have just begun, solutions can not as yet be offered.

The standard file for keywords thus produced is supplemented by the regional network in Bavaria which also supplies the indexing of foreign literature for this file.

3. Retrospective conversion

It has been mentioned already that conversion of catalogue recordings, at present only available in card form, into machine readable data is absolutely essential. As this is a very voluminous project it only has a chance of being achieved if all possibilities to lower the costs are made use of. A step in this direction is utilizing as much as possible of the machine readable data already existing for the conversion. The German Library Institute has developed a model which envisages the following plan of action:

Every library or every regional library centre which intends to convert their not machine-readable catalogue recordings into machine-readable data first of all conduct a search process in the union catalogue for machine-readable data. If the desired catalogue recordings are found there, they can immediately be passed on to the library concerned. If this is not the case, a search process in the OCLC database can subsequently be started. If the result is positive the library concerned can receive the desired catalogue recording via the union catalogue for machine-readable data.

The catalogue recording from the OCLC database would thus be available for this library as well as being available to all other libraries in the Federal Republic of Germany via the union catalogue for machine-readable data, OCLC would receive payment only once for it. In order to reduce the costs for the German libraries still further, the model envisages that the union catalogue for machine-readable data will also pass on its data to OCLC in exchange. This would have the advantage that due to the exchange of data only the balance will have to be paid vor, and thus the costs for utilization of OCLC data be reduced to the same extent as OCLS also acquires data from the union catalogue for machine-readable data for the United States.

It depends mainly on the following facts whether such cooperation will be fruitful:

- the number of hits of German records in the OCLC database
- the overlapping quotion between hits in the union catalogue and the OCLC database
- the number of hits of American records in the union catalogue
- the economy of the entire process.

The German Library Institute has in a test with seven academic libraries in the Federal Republic and in cooperation with OCLC made an effort to investigate these questions. 1000 catalogue records per random sample were drawn out of the Alphabetical Catalogues of the libraries concerned and checked against the union catalogue as well as against the union catalogue.

The tests have proved the following:
- Of all the titles searched 70% were found in the OCLC database, approximately two thirds could have been taken over without or with small adjustments. 57% of the records looked for were found in the union catalogue; the number of hits increased to 69% when only the publications with year of issue after 1945 were considered (their quota of the total sample amounted to 75%).
- Of the records not found in the union catalogue 32% were found additionally with OCLC. This quota rises to 40% for publications with year of issue after 1945.

OCLC has made the following offer for utilization of their data:
- online searches to be made directly in the United States via non-switch primary line
- recording of the needed OCLC titles at the German Library Institute so that the data of the union catalogue and OCLC can be searched with the same retrieval system
- data is to be offered on CD-ROM.

Which process is to be chosen finally can only be decided after more detailed economic investigations have been completed. These investigations are carried out in the German Library Institute.

Further investigations concern the problems in converting the data supplied in MARC format into the German exchange format MAB.

A review of a development that has influenced considerably librarianship in the Federal Republic of Germany for more than 20 years now would not be complete without mentioning the negative experiences and possibly mistakes which today would not have been made in the same way. One can learn from experiences in the past, but at the same time one can be sure that new mistakes will be made in the future. This is less likely to be so though because in the Federal Republic also there is willingness to learn from the experience of others.

It has proved extremely problematic that the Rules for Alphabetical Cataloguing and the exchange format were still in production when the first systems for catalogues were built up with electronic data processing. The first machine readable data was recorded from the middle of the sixties; the rules only reached their final stage in the middle of the seventies, and even now they partly undergo changes. This means, that the exchange format for data could only be completed in the middle of the seventies, and that all catalogue entries recorded before that time have divergences to the rules now valid. This especially leads to great technical problems in regional and supra-regional catalogues which endeavour to unite all data existing at the present time.

In this connection it should be considered whether the decision of the German librarians, to have their own Rules for Alphabetical Cataloguing and their own exchange format has really lead us in the right direction. After the vital conferences in Copenhagen and Paris the Federal Republic of Germany has endeavoured to carry out the decisions reached there about the catalogue standards point by point. Numerous other countries, like the United States and Great Britain, have later on diverged from these decisions. This has lead to the fact that the German Rules for Alphabetical Cataloguing differ in some vital points from the American Rules; as a result the German exchange format for data als differs from the MARC format used world-wide. It follows that the use of foreign data from abroad is only possible after extensive programming and editing work has been done in order to subsequently remove the divergences of the rules and formats. It is not possible to revise the decision for the German Rules because an extremely great amount of machine-readable data has been recorded according to the German Rules which makes a subsequent change impossible.

According to German library tradition occupation with the alphabetical catalogue and with the Rules for alphabetical cataloguing has had priority. Standard indexing systems have not been accepted. In the era of online catalogues we will be faced with great problems in this connection because – as already mentioned – more than half of the users approach the catalogue via the subject headings or the key words. A subsequent subject indexing for all catalogue data is out of the question due to the costs involved; retrospective conversion for the alphabetical catalogue could be possible.

In the past, as soon as new techniques became visible only, we have already stopped the planning and realization of current projects or changed their concept basically. The development of library systems (e.g. network systems, integrated library systems, online user catalogue) is a longtime process. The long periods of development are caused by the complexity of problems to be solved, the extremely differentiated conditions, the long preplanning period and the financial difficulties which cannot and could not be overcome in a short period of time. Technology on the other hand changes in intervals which are becoming continually shorter. Problems must now arise, if due to these changes at short notice again and again basically changed demands are made on the library systems under construction. These changes, however short-dated they appear, again can be only met in a longterm process. We get into danger that the systems will continually lag behind the changing demands, never get to an even temporary finish satisfactory to all, and for basic demands only a bill is drawn for the future. The technical possibilities alone should not be allowed to lead to basic changes of existing concepts. With the change-over to new techniques, with

the alterations of requirements other problem areas besides the technics, for example the relation between costs and performance should be increasingly observed.

Although the Federal Republic is a relatively small country, it has not been achieved to introduce a standard software and hardware for library network systems. This leads to the fact that exchange of data between the individual systems, and the network connection of the individual system can only be achieved with considerable additional effort. It has been proved that effort for standardization, for a high bibliographical quality which has been omitted in one place subsequently has to be invested manifold in another place.

On the other hand it must be observed that the numerous different solutions also have their advantage. In this way, mistakes made in the development of software do not appear in all other systems because no attempt has made for a uniform solution. An economic solution for the current problems obviously lies in the middle between what has actually been achieved in the Federal Republic of Germany and that which would follow from a strict principle of uniformity.

Another reason for the great number of individual solutions can be traced to the fact that the library market is a much too small sector for the large firms in the data processing field and so they are not interested in it. So the software systems were not developed by large firms; they were produced by small software developers or by the libraries themselves.

When training librarians main emphasis is placed in most library schools on the so-called traditional techniques and working processes. Due to lack of sufficient equipment, and also due to lack of sufficient skills with the trainers, instructions in the new techniques are given if need be, but they are not evaluated critically and possibly altered. Inspite of a situation of unemployment this leads to a shortage of qualified library personnel capeable of filling management positions.

Furthermore, another disadvantage to the user is the historically caused separation between the field of documentation on one side and the library field on the other. As a rule indexing of the documents, the build-up of literature and facts databases does not take place in the libraries but in the subject information centres. The libraries show up the literature referred to there and care for its supply. Again expensive technics are required to connect these two fields because the specifications and standards used vary from each other.

At present we are in a temporary situation: in some libraries absolute no data processing is used, in others almost all areas are automated.

Therefore, it is difficult at the present time to evaluate the effect of data processing on librarianship and its services as a whole. But today already it becomes obvious that the service capacity of the libraries has improved considerably especially as far as supply, reference and holdings of literature is concerned. The regional and central means of reference built up have made access to literature possible which in the past was closed to the user. Following this the orders for the local circulation as well as interlending have risen. The experience made in this connection can be summmarized thus: Better indexing of literature leads to an increased demand for it. So it can be expected that with progress in retrospective conversion the demand for older library holdings will increase.

Experience has shown on the other hand also that automation alone in the means of reference and online ordering is not enough to speed up interlending decisively. The last link in the chain is still as in the past the library itself. There the literature has to be located in the stacks, copied, packed up and despatched. As long as it is not possible to speed up also these working processes the benefit of data processing with the indexing instruments cannot be fully utilized.

It can be maintained that the existing structures of organisation in many large academic libraries are not yet able to cope with the needs and possibilities of technics. In the first and second phase of the application of data processing an effort has been made in many cases to show up the existing organisational structures exactly in the new data processing systems. It has been overlooked that new technical processes, which influence so greatly the library work also serve chances and possibilities for changed forms of organisation. It is only now that these problems receive growing attention.

The librarians' places of work in those libraries which apply data processing have changed in many respects. In most cases these changes were not felt to be dramatic because they happened in numerous individual steps; but if one compares the place of work in cataloguing in the year 1968 with that in the year 1988 the differences become obvious at a glance. Because the trade unions and works councils in the libraries of the Federal Republic of Germany are by law entitled to have a say in the matter, great emphasis has been placed on the ergonomics of the working places, the organisation of the working processes, the length of time that is to be spent maximally at the display screens, the safety of the working places themselves. So far not a single librarian has been dismissed from the libraries in the Federal Republic of Germany due to the introduction of data processing. On the other hand, potential working positions suitable to decrease unemployment in the library profession have not been created. For a long time it was maintained that data processing does not destroy working

positions but creates additional ones. It now becomes clear, that allegation cannot be upheld. It is now vital to develop sensible plans to apply personnel set free by data processing to other user orientated tasks. It would be desirable to reach the level of the staff application in the libraries of the United States and Great Britain where the majority of the librarians are employed in the user area. In the libraries of the Federal Republic of Germany the main emphasis of the activity still lies on the internal administration.

I also want to speak about one last experience. The introduction of new technologies – because it just took place in a period of continually reduced budgets – has strongly influenced the discussion about the introduction of fees in German librarianship. The argument was that the new technologies were expensive and on the other hand brought about such comfortable services for the users that it was justified to charge the user with a fee for them.

This argument seems correct at a first glance because the investments for data processing are considerable and can be seen to a penny exactly from the budget of every library. But it is hereby overlooked that the traditional services up to the present time have also caused considerable expenses; but these cannot be perceived at a glance from the budgets. Most recent investigations made in the German Library Institute have proved that the application of data processing in the long run is cheaper than the traditional processes used in the past, and that, therefore, the introduction of new techniques may not be used as an argument for the introduction of fees.