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Automating the Libraries in Slovenia

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The automation activities in the University of Maribor Library

The University of Maribor Library prepared the computerisation of its services for several years. The possibility to realize the plans appeared in the year 1983, when the VAX computer was installed at the University of Maribor. At that time two terminals and a line-printer, which were connected with the central computer, were installed in the library. This was the basis equipment for the circulation subsystems as the first application. In 1983 13.000 records were entered into the user file and 11.000 into the bibliographic file. In 1988 the user file contained 19.000 records and the bibliographic file 100.000 records. In 1994 the bibliographic file contains 160.000 records. In 1987 the library modernized the circulation subsystem with light-pens Data-logic and bar codes Interlive. The transition to bar code system was realized in three phases. With the bar code labels were equipped in the first phase all user cards, in the second phase the books with records in the bibliographic file and in the third phase all new books. In the same year the number of terminals increased to seven and the number of line printers to three. In 1994 the library has 75 terminals and 20 line-printers. At the end of 1984 the library started with the development of the cataloguing subsystem as its second application. The working group chose UNIMARC as standard machine-readable cataloguing format. The University of Maribor Computer Center developed programs which in 1986 enabled to enter the first records in the full UNIMARC format. The library choosed the documents which represent the results of the research work of the professors of the University of Maribor as the first data to be entered in the full UNIMARC format. All faculty libraries in Maribor co-operated in this project. In 1988 the libraries started to enter all new monograph publications in the full UNIMARC format and to print catalogue cards. In 1991 the libraries started to catalogue serial publications and in 1992 non-book material.

When creating the data base the University of Maribor Library followed the computerisation principle which demands every data to be entered only once and the centralized cataloguing principle which demands each book to be catalogued

only once. The library planed a common data base with publications of the University of Maribor libraries, created on principles of shared cataloguing. First participated in creation of the common data base only seven libraries of the University of Maribor, later joined them also other from the same region and from other regions. In 1987 the University of Maribor Computer Center was accepted as the information service for the library information system and system of scientific and technological information of the republics of former Yugoslavia, in 1991 it became the information service for the library system and system of scientific and technological information of Slovenia and changed the name into Institute of Information sciences.

Paralel to developing the integrated information system in co-operation with the University of Maribor Computer Center (later Institute of Information Sciences) the University of Maribor Library introduced also on-line searching in foreign data bases and CD-ROM. In 1987 a contract with the information service DIALOG was signed. In 1989 the library started to search in data bases of the University and Technical University in Graz GRIBSINFO. In 1989 the library started to search in the specialized data bases created by institutes in Slovenia ATLASS (biomedicine, economy, textile technology, chemistry). In 1989 the first CD-ROMs were purchased (SCI and SSCI). They were followed by Ei-Chemdisc, ABI-Inform, MEDLINE and ERIC in the next years. In 1991 the library signed also contracts for on-line retrieval with ECHO and STN.

In 1989 the library started to co-operate in the Alps-Adria working group for the Guide to university libraries. The Chairperson of the working group was the director of the University Library Graz, Dr. Sigrid Reinitzer. The result of the project was the Guide in on-line and printed version, which is available also on diskettes, with data of 114 libraries from Austria, Croatia, Germany, Hungary, Italy and Slovenia.

The Slovenian shared cataloguing system

In 1987 co-operated in the shared cataloguing system only seven libraries of the University of Maribor and the Computer Center (from 1991 Institute of Information Sciences), later joined them also other libraries from the same region and from other regions. The number of co-operating libraries increased to 90 in 1994 and this means 10% of all Slovenian libraries. The name of the shared cataloguing system in Slovenia is COBISS and the name of the data base is COBIB. The shared cataloguing data base COBIB includes 800.000 records (monographs, serials and non-book material). The average monthly increase is 10.000 records. Each of the participating libraries has its local data base with bibliographic and holdings data. The union data base COBIB and the local data bases are updated simultaneously.

The COBISS system connects and supports the functions and activities of

libraries with a uniform methodology of distributed data processing. COBISS software gives the users the support at the automation of library activities on the local level and the development of national library information system. It is the result of successful co-operation between the Institute of Information Sciences and numerous libraries in Slovenia, especially National and University Library in Ljubljana and University Library Maribor. In the next years all of the libraries of higher education, the more important special libraries as well as some school libraries ought to be imcorporated in the COBISS system, whereas all of the regional public libraries in Slovenia already are included in the system.

The computer and communication infrastructure for the functioning of the COBISS system and services in compounded of VAX/VMS compatible computer systems, connected to the DECNET network via the national academic and research network or via public network for data transfer (X.25). To establish connection with the COBISS bibliographic utility and information retrieval service as well as for the purposes of intercommunication, the users have the following possibilities at their disposal:

- via Internet (193.2.126.10)

- via their own computer system, connected to the nearest communication node of the national academic and research network, or to the public X.25 network (16210020143)

- via terminals or PCs via appropriate multiplexers and the leased line to the nearest computer connected to the DECNET

- via terminals or PCs via the PAD multiplexer, connected to the public X.25 network

- via a terminal or a PC and the modern via the dial-up line (for searching data bases only).

The co-operating libraries use the following hardware equipment: VAX3100, VAX4400 computers, terminal servers types DEC90TL, DEC700, Emulex P4016, video terminals VT420, VT320, matrix printers FUJITSU DL900, 1100, 1200, 4400, 4600, 5600, laser printers KYOCERA FP1500, bar codes readers SYMBOL LS2080. They use the operating system VAX/VMS.

The COBISS software supports the functions of the information retrieval service as well the local functions of the libraries. It consists of the following segments: searching, cataloguing, reports, loan and OPAC.

The searching segment supports searching databases. In the software a user interface with a syntax, similar to the one used by DIALOG information services, is implemented. The software allows searching all data that has been defined according to the agreement with the producer prior to the structuring of an individual database. The data can be placed into indexes for searching, either by

word indexing, or by phrase indexing. When searching, terms can be truncated from the left or from the right side. In addition to using the Boolean operators, the search can also be done by proximity operators to specify the relative nearness of search terms. Two types of indexes for searching, the basic index and more additional indexes are defined. In on-line searching the users have several search commands at their disposal that can improve both the search process as well as the quality of the final search results: on-line viewing data base indexes, sorting search results, saving search strategies, on-line selective dissemination of information and editing search strategy. The software also provides simultaneous searching multiple data bases that are on-line accessible. The results of the on-line search can be displayed in different pre-defined and user-defined formats. Most of the searching software functions are integrated into other segments.

Shared cataloguing is based on a co-operative data collecting and distributed data processing, thus allowing a rational division of work and effective rationalization of the demanding procedure of the library materials processing. It is sufficient to process each unit only once and on one location only. After this has been done, the record is online accessible via the union COBIB database to all participants in the system. In the process of shared cataloguing the data is entered on local computer system. In this way, on local computer system local databases are created and mantained, whereas on the central computer system in the Institute of Information Sciences simultaneously the union COBIB database is created. The data is generated only once and on one location only, in the local data base. The union and the local data bases are being updated simultaneously. In this way, their consistency is guaranteed and duplication of records is avoided. The local data bases by themselves represent a whole, whereas in their relationship to the union data base, they represent its segments. For bibliographic records of one and the same unit contained in several local data bases, only one revord is created in the union data base. Before creating a bibliographic record, the creator first checks via the local computer system if the bibliographic record he wants to create already exists in the union data base. If the record already exists, he copies it into his local data base, and, if needed, modifies it and adds data of local importance. Some of the holdings data, by which the physical presence of a library materials unit is documented on a certain location, as well as data necessary for the co-ordination of the purchase policy, are transferred into the union data base. New bibliographic records are only entered if the record for a specific unit doesn't exist in the COBIB data base. When creating records on serials, the international ISDS (International Serials Data System), from which relevant data is transferred into the COBIB database and into the local databases, is used as the authority data base. The structure of the union database and of the local data bases is based on the UNIMARC format which had to be constantly supplemented for monographs, serials, non-book material and articles. The format is divided into three segments: for

bibliographic data, for authority data and for holdings data. The users have, according to the type of materials, access to the record in the data bases on a selective basis, which means that each individual data base consists of several logical segments. Such an architecture allows the data to be used for different purposes. Supported by the appropriate software, the users can exploit data selectively as: public on-line accessible data bases, data bases for the display of various bibliographies (national, university, special, author's) and catalogue cards, on-line monographs catalogues, on-line serials catalogues, source of information for the interlibrary loan and circulation, source of informtion for the co-ordination of the purchase of library materials, source of information for building specialized data bases. The COBIB data base covers the functions of central and regional on-line catalogues.

The reports software enables the users to form output to different formats from the data bases that are being built within the shared cataloguing system. Usually, the reports are made from local data bases, though some are made from the union data base, too. They contain bibliographic and holdings data for national and foreign materials in the libraries included in system. The report software enables the users to print catalogue cards, bibliographies, inventory books, bar code labels, lists of subject terms, reports for the co-ordination of purchase and statistic reports. The most important outputs are the Slovenian National Bibliography and the Bibliography of the professors and researchers at the University of Maribor.

The loan software supports the automation of library loan which is one of the most important local functions of the libraries. The system of local loan is closely connected with sthe shared cataloguing systems and with OPAC, so that any change in the local data base is reflected in all three systems. The loan is only possible when there are corresponding bibliographic records and holdings data on the level of the local data base. The loan software enables the user to register new members and to maintain the data on library members, to perform loan services, to prolong the loan period, to reserve library materials, to access the local catalogue and to view bibliographic and holdings data on individual physical units of library materials, to view which of the users has a certain item on loan, to view which of the users has a certain item reserved, to produce overdue notices, to produce the daily, monthly and yearly statistis on library materials by different criteria, to produce tables and lists of library materials on loan, to produce statistical tables about the users by different criteria, to order materials from other libraries included the DECNET network by electronic mail or by direct communication electronic phone. The advantages of the computerized loan system are the following:

- faster evidence of book lending, returning and reservation with bar codes and terminals

- the user completes only the call slip with the book number

- decreasing the possibility of error making

- the stating of book returning delays and printing of overdue notices are done by the computer, the librarians' only task is to put them into envelops

- it is not necessary to count the lending forms for statistics, the computer makes daily, monthly and yearly statistics

- the computerized data storage saves the library's space for other usefur purposes

- the due information is the basis for correct decision in acquisition policy.

OPAC is the subsystem of the COBISS software which provides the users on-line access to library catalogues and to databases of the institutions included in the COBISS system. The OPAC software is composed of two logical programme complexes. The first complex (Client) is a user interface, and translates the user's actions on the screen into a formalized question, thus transmitting them to the second programme complex (Server) on the same or on another computer. The Server responds to questions issued by the Client. Whereas the Client may generally be installed on any computer within the DECNET network, the Server can only be installed on computers on which databases from COBISS system are installed. OPAC enables the user to view local catalogues and union COBIB database. OPAC enables the following displays from individual local catalogues: the display of bibliographic data in different formats (abbreviated format, user format, full format, card format), the display of copy specific holdings data, information as to wheather or not the book is momentarily on loan and whether there are available or unavailable copies. OPAC enables the following displays from the union database: the display of bibliographic data in different formats, the display of summary holdings data from different catalogues on different levels. The OPAC software enables searching different types of materials and is adapted for use at different levels of search techniques for beginners, intermediate and advanced.

Supported by the COBISS system the National and University Library in Ljubljana carries out key functions in the realization of the programmes of development of the national library information system. The library has an important role in the working process and in the management of the development of the COBISS system. The national library maintaines the register of Slovenian libraries as the data base COLIB. The national library is also the national ISDS enter and agency for ISBN and ISSN. The data on serials, maintained by the National and University Library in Ljubljana are transmitted

via the COBISS system to the international ISDS Centre in Paris, where the international ISDS database is maintained. The COBISS system recognized three categories of members: national member, full member and associated member. The national member is the national library. Within the COBISS system such a member assumes special rights and obligations as education of staff and users, quality control of the work of newly incorporated institutions, current quality control of the COBIB data base and the revision of the records. The national member also participates in the management of the development of the COBISS system. Full member is the institution that actively participates in the process of shared cataloguing as well as in the construction of the COBIB database on the basis of a preliminary verification of its qualification. Full members with more than 10 employees, and which yearly contribute at least 1000 records corresponding to the agreed-upon quality criteria of the records, into the COBIB database, have the right to participate in the management of the development of the COBISS system. Associated member is the institution that makes an agreement with the COBISS system on only using data bases that are on-line accessible via the COBISS information retrieval service.

The librarians in Slovenia got the first experience in work with the computer in the circulation and cataloguing applications, later in information retrieval and acquisition. Crossing from the classic to the computerized system the librarians could not avoid additional accupation. Even by very simple computer applications it isn't possible to finish the old way of work and to begin the new one at once. It is necessary to work a certain period parallel. But now the librarians in several Slovenian libraries cannot imagine their work without the computer.