

INSPEL

A large wireframe globe is centered on the page. The globe is composed of a thick black outer circle and several thin black lines that form a grid of latitude and longitude. The year "1995" is printed in a bold, black, sans-serif font in the center of the globe.

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INSPEL is a professional journal primarily for the dissemination of papers written or proposed for publication by members of the IFLA Division of Special Libraries. The Division promotes and coordinates the work of particular relevance to the specific types of libraries or library activities in its Standing Committees for Art Libraries, Biological and Medical Sciences Libraries, Geography and Map Libraries, Government Libraries, Science and Technology Libraries and Social Science Libraries.

The Journal is directed to an international readership among librarians in government and international agencies, as well as in universities and research institutions. Librarianship is a key subject in a rapidly changing world. Improved practice will help produce economic benefits, and special attention should be given to problems concerning libraries in Developing Countries.

Articles will be drawn primarily from activities conducted within IFLA. But on occasion the Journal will publish articles on specified topics by non-IFLA contributors. Any reader interested in preparing such an article is invited to submit the paper to the Editor. Material on all aspects of librarianship will be considered eligible for publication.

The views and interpretations in articles published are those of the authors and do not necessarily represent the policies of IFLA or ASpB.

Comments or brief notes responding to Journal articles are welcome and will be considered for publication to the extent that space permits.

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FOREWORD

The National Library in Prague (Czech Republic) hosted an "International Seminar on Social Science Libraries" October 31, 1994 organized by the IFLA-Section of Social Science Libraries. This edition of INSPEL gathers selected presentations of this Seminar, several of which have been rewritten for publication.

First of all I would like to thank the members of the local organizing committee, especially Dr. Hana Pessrová, director of the CERGE-EI Library, and Prof. Stanley Kalkus from the Charles University, who also chaired the Seminar.

Thanks are also due to Dr. Vojtěch Balík, director of the National Library in Prague, for his generosity to host the International Seminar.

The first three papers address problems related to the influence of the transformation process on libraries in the Czech Republic. Three further reports - in response to the increasing information needs caused by the transformation process - are papers on the interrelationship between data processing and library work in Western Europe.

Ekkehart Seusing

Chairman of the IFLA-Section of Social Science Libraries

THE CZECH NATIONAL LIBRARY AND ITS SPECIAL COLLECTIONS

By Vojtěch Balík

Abstract: Main mission of Czech National Library in Prague is to collect and bibliographically cover documents of national production, including so called Bohemica from abroad. In addition, Library's general collection of foreign literature is traditionally the largest in the country. Special collections represent the third important constituent part of the Library: Department of Manuscripts and Old Prints (9.000 med. manuscripts, 5.500 incunabula, etc.), Music Department (4.500 music manuscripts, 100.000 printed music mat., Mozart collection, etc.), Library of Literature on Libraries and Information Science (30.000 publ., 200 journals, etc.), and Slavonic Library with 700.000 items of Slavonic literature incl. Smirdin Library, etc. History, functions, and specific role of these special libraries has been described.

The Czech National Library in Prague is the biggest and one of the oldest Czech libraries. Its main mission is to collect, preserve and make available a complete set of documents of national production, as well as so called Bohemica from abroad. The right to receive legal deposit copies of each title published within the territory of the Czech Republic enables the Library to perform the function of the National Bibliographical Agency, as well. On the other hand, the Library's traditional mission is to develop a general collection of foreign literature, which is the largest one among its holdings. The reason of it has resulted from the history.

The origins of the National Library (NL) collections date back to the mid-14th century, when the Prague University was founded by Emperor Charles IV who bestowed upon the new University colleges a collection of manuscripts. This collection and further book acquisition obtained by the University Colleges till the first half of the 17th century represented the first source and constituted the core of the contemporary NL collections.

After the year 1556, when the first group of Jesuits came to Prague and began to build a large college called Cletinum, a new large library came into existence there and was growing very fast. In 1620's the Charles University was passed over to the Jesuits in consequence of defeat of the Czech protestant political movement,

and both the University and the Jesuit College Libraries merged together and were located in Clementinum. In 1777, four years after the suppression of the Society of Jesus, the Library was taken over by the State, opened to the general public and named The Royal Imperial Public and University Library.

Although since that time, the Library has not been related to the University any more, the word "university" itself had remained a part of its often changing name for next almost 200 years. During the 19th century, the Library had been gradually commissioned to function as a national library, namely for its having obtaining the right of legal deposit. In the 20th century, it has become the national bibliographic centre. After a long period of the so-called State Library existence, the name of the National Library was accepted only in 1990, reflecting thus more correctly its main functions.

Nevertheless, the NL has never broken its links to the Charles University respecting in general the needs of under graduates and of the academic staff as well, because there is still no central University Library in Prague. Therefore, one of the major activities of the NL is to build a general collection of foreign literature and to provide an access to it. Its acquisition policy is directed to cover traditional university fields such as humanities, and social and natural sciences.

The main functions of the NL are as follows:

- to build, preserve and provide access to the Czech national collection of documents and to be responsible for its completeness,
- to build, preserve and provide access to a general collection including a major part of foreign literature, all documents aimed at traditional university branches,
- to provide central bibliographic and information services, having the main task in publishing the Czech National Bibliography,
- to provide other libraries with consultancy services and experts' opinions in different fields of their activities,
- to develop library automation technology and standards etc.

Nowadays, the whole National Library collection of ca. 6 million items, contains three main parts: 1) National conservation archive of Bohemica, including those from abroad, and Slovaca up to 1992, 2) General research collection, containing both Czech and foreign material focused on humanities, social and natural sciences, and 3) special collections.

The National Library has been for several years undergoing changes of its organisational structure aiming to improve the flow of material, use of capacity, and to establish simple and integrated processing lines. In this respect, the problem of special collections, activities, and services had to be faced. Rethinking the whole area, we concluded in defining the main general processing line on one side, covering those two main parts of the national Library holdings, i.e. the National and General ones, and on the other side, special organisational units keeping their own collections apart. It has been decided that the most important of special collections of the National Library be under custody of either autonomous libraries or special departments, not integrated into the main line of general library process; their own processing scheme should be run in parallel. It means they are charged themselves with acquisitions of relevant material, bibliographical processing of it, making it available, providing readers with special services, etc. However, being constituent parts of the general National Library system the autonomous areas have to observe the same international standards the National Library itself has adhered to. Obviously, the funding and administration is centralised for the National Library as a whole.

The special areas are as follows:

Department of Manuscripts and Old prints

The collection of the old University library has become basis for the holdings of the Department. It contains about 9.000 medieval manuscripts, 5.500 incunabula, a collection of old Bohemica, amount of Greek papyri and other various fragments, old Arabic literature, old Prague Charles University theses, and many other special collections. However, other several hundreds of old printed material have been included into the general research collection. A retrospective bibliography of Czech book printing to 1800, as well as of medieval manuscripts and incunabula is being produced by the Department. It also participates on the project of a digitalized format of that retrospective bibliography. In addition, selection of the most precious items is undergoing a programme of image transformation into digital media, recently launched by the National Library. The Department provides scholars as well as the general public with special services in the field, and consultancy, and is active in national expert committees.

Music Department

Established in the 1920th, the Department holds 4.500 music manuscripts, 100.000 items of printed music material, private correspondence sent by and to composers, and amounts of other reference publications, etc. The whole collection is to be taken as unique national music archives, but it contents considerable foreign material, too. If nothing, at least the famous Mozart collection (Memorial)

founded in 1837 should be meant. The union catalogue of the music material kept by both institutions and individuals on the territory of the Czech Republic is being developed here, as well as other special bibliographical projects. The Department is not only active as special information centre, but also provides other libraries with consultancy concerning their music departments activities. In addition, the secretariat of the Czech Committee of the International Association of Music Libraries is there.

Library of Literature on Libraries and Information Science

A collection of more than 30.000 publications and 200 journals from the field of library and information science is kept here. Special reference tools and services are available - abstracts, current contents, databases, directories, consultancy. Besides, the collection serves as basis for activities of the whole Librarianship Division of the National Library - special research, analyses, statistical data control, consultancy, and education.

The Slavonic Library

It is a great special library keeping and collecting material in Slavonic languages and referring on the literature, history, art, ethnography, and institutions of Slav nations. Established by the Czechoslovak government in 1920 for the purpose of promoting scientific and economic contacts with Slav countries, and especially supporting spiritual life and institutions of emigrees from the USSR of the time, it was later included into the National Library. Unlike the Helsinki Slavonic Library (Finland) focused on older Russian literature, the Slavonic Library of ours has collected more material from first decades of Soviet era. Nowadays, the Library holds almost 700.000 items, divided into national departments: Russian, Ukrainian, Byelorussian, Bulgarian, Polish, Lusatia-Serbian, and South Slavonic. (This last one, at present, is basis for defining the Bosnian literature, as the National library recently adhered to the international programme for reconstruction of the National and University Library of Bosnia and Herzegovina). Some parts of the whole Slavonic collection are really unique. E. g. the collection of newspapers of so called Russian foreign historical archive connected with activities of the Soviet emigration, a number of very old precious items, or a collection of 11.000 volumes of the Russian literature from the 18th and the first half of the 19th century representing a remnant of the library of the Petersburg bookseller and editor Smirdin, etc. The Slavonic Library suffered from nazis discrimination or later from communist political pressure. However, it has reached good results, contributing to the development of Slavic studies, and has been acknowledged by specialists all over the world. The Slavonic library is realizing several important bibliographical projects and is cooperating with a number of institutions involved

in the field such as special Slavonic departments of universities and libraries all over the world.

The Central Economic Library

This Library has its origins in the beginnings of this century as the library of social sciences. Thus, it traditionally, in spite of its present name, still keeps this broader scale of interest. The Library became division of the National Library in 1950th, but at present we are preparing transmission of it to the Prague University of Economy. The decision resulted from the fact, that this Library for decades has been housed directly inside the building of the University of Economy, permanently providing its students and staff with library services. The collection of the Library contents ca. 750.000 items.

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TRANSFORMATION OF THE CZECHOSLOVAK PARLIAMENTARY LIBRARY

By Karel Sosna

Abstract: For historical reasons, the library shows different periods of development. Today it has launched a well equipped stock and implemented the integrated library system Tinlib. Next on the agenda is a new organizational structure.

The library was founded in 1918 at the same time as the independent Czechoslovak state and its parliament. It was linked, however, to the tradition of the library established in 1857 for the Czech Assembly and the new parliamentary library inherited its stock of books. In the period between the two world wars this new library was regarded as one of the most important centres of cultural and political information in former Czechoslovakia.

The founder of the library and its first director, Dr. Zdeněk Václav Tobolka, took active part in international librarians' meetings and was a founding member of the IFLA at Edinburgh in 1927. He was elected a member of its International and Bibliographical Committee.

During the Second World War the library ceased its activity. After a short period of revival in the years 1945-1948 a long period of stagnation set in. Because of our country's complicated political development parliament lost its raison d'être as a forum for open debate. The original parliamentary library which had been of high quality, suffered a gradual decay. In 1989 it was under-staffed (only 5 librarians), lacked up-to-date technology (there was no PC, fax or xerox) and there was absolute lack of any literature concerning the functioning of a political system in conditions of pluralist parliamentary democracy including fundamental general and specialised encyclopedias, reference books and dictionaries.

The situation now is completely different. In 1990 we have started close cooperation not only with Czech libraries but also in the framework of IFLA with other parliamentary libraries in the world. In this cooperation we worked out a new concept of a modern parliamentary library which is currently being step by step applied by the library.

We have received a big support from the Western parliamentary libraries. The biggest one we have received from the U.S. Congress through the Library of Congress. There were almost 200 000 USD that we spent in three ways.

1) We have bought many books, periodicals and CD-ROMs to fulfill the gap in our information sources I mentioned above. 2) For most of the librarians two-week courses have been arranged at the Library of Congress in Washington and 3) our Parliamentary Library has been equipped with means of the modern information technology (PC, CD-ROM drivers etc.).

Our library is now almost fully automated on the basis of the integrated library system Tinlib. We have already implemented three of four basic moduls of the system it means acquisition, cataloguing and serials control. With the circulation modul we shall start in January 1996. Our LAN is a part of the integrated information system of the whole parliament so that each member of parliament who has his PC has also direct access in our online catalogue. Through the Internet our library has also access in databasis of other libraries and information centres. In this connection I would like to stress that our library as the first library in our country takes over daily through Internet data from the National Bibliography of the National Library in Prague and disseminates them among its users.

The library serves primarily the members of the Czech Parliament as well as the staff of the Offices of both legislative bodies it means Chamber of Deputies and Senat. Subject to the approval of the library's director, holdings may also be lent to serious researches from state and governmental bodies, academic institutes and universities. Public use of the library is limited and can only take place when no chamber of the parliament is sitting.

Nowadays the library is a part of the Press Department of the Office of the Czech Parliament. Under a draft of a new organisation structure for the Office of the Czech Parliament which is due to be approved in December of this year the library would become either one of the departments of a broader information division or an autonomous department of the Office of the Czech Parliament subordinated directly to the head of the Office.

There are 11 people now working in the library. 5 of them are university-educated, 4 have a secondary diploma and two have basic educational qualifications and professional experience in the library.

The main book collection of the library has about 200 000 titles form such fields as law, politics, economy, philosophy, sociology, modern history, culture, statistics and geography. The library also holds encyclopedias, dictionaries, travel books, charts etc. Accessions account is for about 1300 items per year. The library has

the right to a deposit copy from Czech publishing houses. Foreign literature is acquired through purchase, gift or exchange. As a deposition library of the UN the library holds in stock the principal documents of the UN including selected publications by all UN agencies and other international bodies such as the Interparliamentary Union, the International Court of Justice etc. The core of the library is created by the comprehensive collection of the acts and publications of the Czechoslovak parliament since its inception, including bills, parliamentary prints, verbatim records and statutes. It also holds the law and parliamentary publications of 14 foreign parliaments acquired by exchange.

As for periodicals the library has the right to a deposit copy of all Czech dailies and about 300 other titles.

The library acquires also about 70 foreign periodicals.

The library publishes information for the members of the Czech Parliament. There are so called Information Sheets of the Parliamentary Library devoted to the different current topics. List of new books are published monthly and a survey of the legislative activity of the Czech Parliament is published twice a year. The latter is also published in an English version.

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LIBRARIES IN TRANSFORMATION. EXAMPLES FROM THE CZECH REPUBLIC - LIBRARY CERGE-EI

By Hana Pessrová

Abstract: The author presents the history of a specialized joint library founded in 1993 of two research institutions. The main characteristics and special features of the library are presented.

CERGE - The Center for Economic Research and Graduate Education was officially founded in Prague on March 1, 1991. EI - The Economics Institute was founded at the Czechoslovak Academy of Sciences in Prague on August 15, 1992. The two institutions have cooperated since the founding date of the EI and they concluded a long - term cooperation agreement in Fall, 1993. The eventual goal is a merger of both institutions.

CERGE is a semi-autonomous unit of Charles University, established with the assistance of the Department of Economics at the University of Pittsburgh. CERGE is governed by an international Executive and Supervisory Committee within special guidelines provided by Charles University. Financial support for the research and teaching mission of CERGE is provided by western foundations, cooperations and government organizations, as well as by the government of the Czech Republic and Charles University.

The conceptual background for CERGE was prepared by Professor Jan Svejnar, University of Pittsburgh, and Professor Josef Zielenec, currently the Minister of Foreign Affairs of the Czech Republic. Official Backing of CERGE has been provided by Rector Radim Palous of Charles University, President Wesley W. Posvar and J. Dennis O'Connor of the University of Pittsburgh, and Professor Richard E. Quandt of Princeton University and the Andrew W. Mellon Foundation.

CERGE is a priority project of the government of the Czech Republic and in 1992 and 1993, it was named a Recognized Centre of Excellence in doctoral /Ph.D./Studies by the Secretariat of the ACE Program of European Communities.

EI - Economics Institute, is a new institute of the Academy of the Czech Republic, the official successor of of the Czechoslovak Academy of Sciences in the Czech

Republic. The conceptual framework for EI was prepared by Professor Joromir Vepřek of the Czechoslovak Academy of Sciences and Professor Jan Švejnar of the University of Pittsburgh and CERGE. In line with the rules of the Academy of Sciences, EI is directed by the Director in consultation with the Scientific Council of EI.

Because of the significant overlaps in CERGE and EI's goals and activities, EI was founded with the intention that it would closely cooperate and collaborate with CERGE. From 1993 there are four main trends in CERGE-EI's activities:

1. To train future university and college faculty researchers in theory, methods, and applications of modern economic analysis.
2. To stimulate and support advanced economic research.
3. To disseminate research and policy information to a wider group of professionals (e.g. government officials, enterprise managers and economists from other institutions) through seminars, symposia, conferences, working papers, and publications.
4. To transfer modern western standard of scientific work into the Czech, Slovak and other Central and East European republics and thus provide an example for the transformation of other academic institutions in the region.

Organization of CERGE - EI

CERGE-EI is organized as a western type graduate school with a research center. CERGE-EI enrolls about 40 new graduate students each year. Approximately 10-15 visiting western faculty members come to teach at CERGE-EI each year.

Before the start of the academic year, the newly recruited students attend a Summer Preparatory Semester in July and August during which they receive preparatory training in intermediate micro- and macroeconomics, mathematics, and English. The academic year starts with fall semester and the spring starts in January. The working language is English.

The CERGE-EI is jointly financed by the government of the Czech Republic through the budget of Charles University, the Academy of the Czech Republic and Western partners (foundations, governments).

Library CERGE - EI

The Library is at the heart of a modern graduate program. EI was established in 1993 when the CERGE and the Economics Institute of Academy of Sciences of the Czech Republic combined their resources. The library stock and services of the new established Economics Institute has been transformed from the previous EI of

Academy of Sciences of the Czech Republic. Furthermore, the library stock of transformed CERGE-EI Library has been enhanced thanks to grants from the Austrian government, the American Westinghouse Foundation and to the support from Pittsburgh University to the CERGE library collection.

The CERGE-EI library has amassed a unique collection of works dealing with the economic transformation in the countries of Central and Eastern Europe. Moreover, it facilitates easy access not only to its stock, but periods vary. The library holds services for the public daily, except Saturdays and Sundays.

At the ground floor the library (lending and reading room) holds services for the public daily from 9 a.m. - 5. p.m., and for CERGE-EI employees until 9 p.m., except on Fridays, Saturdays and Sundays.

The library has also improved the internal work organisation during this summer. It works now as a seven-member team with the help of 7 students (Assistantship CERGE, Charles University). There worked about twenty five people in the library in the former Economics Institute.

In the coming weeks the library is going to test connection to Internet on the base of Czech Academic network CESNET.

The library is working on the classification, evidence and performance of the older collection. That's why the library entered into contact with OCLC USA concerning the re-cataloguing programme.

The library services for the general public will be officially opened next week, November 10, 1994, with the assistance of all sponsors and economic and librarian professionals.

The library received an official proposal from The World Bank to participate in the Programme to the deposit libraries of the Bank.

Total area for the library: 387,81 sq.m. operational
85,22 operational in future

Seating capacity: Lending Library: 15
Reading Room: 11w

Total number of volume in collection: 30.000

Numbers of journals received: Total: 334

Paid: 267 **Exchange:** 65 **Gratis:** 2

Number of documents received gratis: 700

Equipment: 6 computers, 1 microfiche mini-reader, 2 photocopiers.

By the end of this year there will be installed a security gate to protect all free opened library collection

There is 1 CD-ROM database: EconLit

Number of users daily: 50

Computerized bibliographic data base: CDC/ISIS, aprox. 3000 records.

The library served during the year about 3.800 clients.

The library users are:

government planners, project managers, economists, professors, students, researchers, others.

The library lends books/journals to:

members of its own organization, members of other organisations, members of the public, libraries.

Language of choice: English, French, German, Czech, Slovak, Russian, Polish

Major sources of publications of information: publishers, booksellers, libraries, press, economic information centers.

User require: Bibliographic searches, purchase of publications for individual needs, quiet work area.

Library is opened to all public, the lending library has non-barrier access, it could be used by disabled people from other institutes. We are trying to find a sponsor for building a social room for disabled people.

The library is dealing with problems such as Finance, Space, Technical and Technological Equipment /hardware, software/ and also English Language Communication / English is essential for daily services/.

Thanks to positive suggestions and valuable help from Academy and Charles University and also foreign sponsors the library hopes to manage all these problems successfully.

Hana Pessrová

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RESEARCH SUPPORT IN THE SOCIAL SCIENCES SPECIAL LIBRARY AND THE CHALLENGES OF NETWORKED INFORMATION

By Diann Rusch-Feja

Abstract: General research support services in special libraries include current contents services in various forms, access to online and CD-ROM databases, individualized literature searches, bibliographies, citation analysis, rapid acquisition of needed texts, documents and other information. As a result of increased use of networked information (CD-ROM network, external networks and information sources, especially the Internet, etc.), researchers expectations of libraries and library service are changing drastically and often information needs are moving away from the library context and being fulfilled by services which bypass the library completely. Hence, new methods of information management, development of new services and marketing these services is a prime concern for special libraries. Described in this paper are services developed at one social sciences special library in a research institute which respond in part to the new challenges presented by networked information. These include enduser training for the use of inhouse information services and the CD-ROM networks, inhouse electronic mail functions for acquisitions requests and interlibrary loan requests which can be simultaneously integrated in the researcher's own bibliographic database or word processing files, and a clearinghouse concept for concentrating pointers to specialized, project-oriented information dispersed in various forms within networked information sources such as the Internet.

The Max Planck Society supports 66 research institutes and approximately 35 working groups in various research areas. The Max Planck Institute fur Human Development and Education in Berlin focused on research projects in psychology, sociology, socialization, and education, as well as education and research administration, educational sociology, etc., Its Library and Research Documentation Unit holds approximately 160,000 volumes including approximately 30,000 bound periodicals with an annual increase of ca. 4000 volumes. The Library currently subscribes to 756 periodicals and 93 loose-leaf texts of laws and legal regulations. Gray literature, noncatalogued research reports and press releases on relevant research projects and developments represent important collection areas.

The Library and Research Documentation Unit cooperates with the five other units in the Institute involved in supporting statistical analysis, publication, technical services and computer systems to serve the ca. researchers and their support staff.

General research support services comprise most of the Library and Research Documentation activities with the exception of the usual background organizational activities such as acquisitions, cataloging, classification using a specially developed thesaurus, journal check-in, subscription administration and preparation for periodicals binding.

Improving Traditional Services of the Special Library

In our efforts to add value to library work, we have updated the following traditional services:

1. rapid acquisition of needed texts, documents and other information
2. current contents services in various forms
3. access to online and CD-ROM databases
4. individualized literature searches
5. bibliographies
6. citation analysis

1. Rapid Acquisition of needed Texts, Documents and other Information

As in other special libraries, a major service to support the research staff is *rapid acquisition of needed texts, documents and other information*. This means actively seeking means of speeding up the order and delivery procedure without unduly high costs. Thus, we evaluate supply conditions from wholesalers and publishers regularly and have consultation at least once a year to discuss possible ways of reducing order processing and delivery time. This has resulted in rebates in airmail orders from the United States and Canada, as well as from the United Kingdom, based on the annual volume of orders, in special handling by ordering directly to a specific person, fax ordering and other positive aspects of this procedure. It is disappointing that it is not yet possible to order by electronic means. We have inquired into this possibility over the last three years and we hope this will change in the near future.

Articles from non-held journals are acquired directly from cooperating libraries in Berlin, making this a local area interlibrary loan through which we can fill about 70 percent of all requests for items not held in our collection - most of these re-

quests within a week's time. Only about 25 percent of all requests for non-held items are sent to the German ILL network. Up until now, this network has not been very effective and is very slow, and although regional and national efforts are currently being made to upgrade the services. Requests via the German ILL usually take between 3 weeks and 6 months. We are now testing the effectiveness and feasibility of using external electronic document delivery (EDD), but as yet have not had enough experience with the various hosts and services to judge their individual merits of our purposes. Presumably, individual decisions will still have to be made with reference to source, cost, speed and quality of service.

Since July 1994, we offer email ordering for our ILL requests within the Institute network. The email consists of an input screen which is filled out by the researcher in his own account and then sent to the ILL librarian in the Library.

Mornings, the ILL librarian imports all new orders in the ILL mailbox into the ILL database for processing (a subdatabase within the library system). This alleviates keying in the data from a printed form. This new service has been very popular and saves on work for the researchers and their support staff. A further advantage beyond the obvious advantages of speed and direct order (without requiring support staff to type the request on the printed form), is the aspect that the researcher has the bibliographical data in categorical fields and can import this into his own literature administration database if he so desires. Weekly, we are receiving an average of 40 email requests and 55 requests on paper forms.

2. Current Contents Services in Various Forms

Both print and non-print *current contents services* are available from our Library and Research Documentation. We subscribe to *Current Contents in the Humanities and the Social Sciences* (ISI) in both paper form and very recently also on CD-ROM. We have also received permission to test the CD-ROM version from CD-Plus temporarily at a reduced rate as part of Max-Planck-Society wide negotiations with CD-Plus and ISI.

In addition, the tables of contents of approximately 380 journals are copied for distribution according to individual profiles for 58 researchers in the Institute. These are sent in folders to the researchers and they, in turn, tick off the desired articles for their support staff to copy in the Library. Using this method, the journals are always available for browsing and targeted research in the library and the tables of contents are available on the researcher's desks within two days after receipt in the Library.

In addition, we are in the process of testing digitalized tables of contents both in form of weekly diskette service and via telnet facilities (SWETSCAAN). Various TOC services offered by other external hosts (UnCover Reveal, Inside Information, etc.) will be investigated in the coming months. Depending on financial resources for network licenses and costs per number of titles, a separate database for the digitalized tables of contents will be made available via the Institute's network, and at the same time the individual tables of contents will still be sent to the researchers directly via their email boxes according to their individual profiles. Since our library system offers the possibility of integrating this data into the bibliographic database, it is likely that the bibliographic information for individual articles in journals we subscribe to will be retrievable there as well, although this involves a policy decision. Adding the articles from the tables of contents services may unnecessarily inflate the catalog and require indexing for subject access. Up to now, only a minimal number of selected articles have been included in the library catalog.

3. Access to Online and CD-ROM Databases

Individualized literature searches have traditionally been an important part of special library work and our Library and Research Documentation Unit is no exception. Since 1980, online databases have been offered for searches performed by the senior research librarian/documentalist staff, and continue to be offered, although in a greatly reduced manner. This is due to the turn to *enduser searching on CD-ROM databases*. Since 1990, a CD-ROM workstation and 5 CD-ROMs were offered for enduser searching in the Unit. By 1993, the number of databases subscribed to totalled 10 and since early 1994, a second CD-ROM station on a Macintosh was made available to accommodate the many Macintosh users in the Institute. Prior to this, Biblo-Link provided an interface between the DOS-based CD-ROM database retrieval results, but did not always function to the satisfaction of the Macintosh users.

Since May of 1994, a *CD-ROM network* based on a DEC-Infoserver, 7-drive CD-tower and no additional software except a Macintosh Client for the Infoserver has enabled us to offer five CD-ROM bibliographic databases for searching using the Institute's network serving both IBM-compatible PCs and Macintosh units in the network. As a value-added feature, the logon procedure of the individual users has been internally expanded to automatically facilitate use of the CD-ROM-network. In certain cases (for Macintosh users and certain users whose other frequently used programs prohibit simultaneous loading of these programs and the CD-ROM network) a menu structure was integrated by the Institute's computer department.

This network may be expanded in the near future, depending on current negotiations regarding the testing of a Max-Planck-wide CD-ROM network.¹

With the opening of the CD-ROM network, new service aspects for the library opened up as well. Since the endusers are no longer in immediate proximity of ad hoc consultation with the library staff when working from their disks, the Library has offered *enduser training seminars* at both the beginning and advanced level. The first of these seminars treated the CD-ROM databases most frequently consulted in the Institute, PSYCLIT and PSYINDEX. In the first 12 one and a half hour demonstrations with handouts and hands-on experience, 50 participants were trained. Further training demonstrations for the sociological databases in the Institute and for the educational database will be carried out in February and March 1995.

The feasibility of integrating more of the Institute's CD-ROM bibliographic databases and even possibly dictionaries, etc., into the CD-ROM network must be tested in the second phase of the CD-ROM network plan. Since the most frequently used CD-ROMs were primarily Silver Platter databases with the user-friendly retrieval system SPIRS, it was easy to integrate them in the first phase of the CD network. The retrieval software of the other databases is completely different: even on two different CD-ROM bibliographic databases using retrieval software from the same firm, different aspects determined by the database producers have created variations in the retrieval software. This influences not only the possibility of simultaneous searching in multiple databases, but also the preparation of the user training seminars.

As a further value-added feature, it was planned to link the *holdings notes* for our journals holdings to all the Silver Platter CD-ROM databases so that these would be immediately visible with the search results. Unfortunately, the Silver Platter CD-ROMs we use do not allow this possibility. It is available on the MEDLINE-CD-ROMs and also for various databases provided by other hosts. This possibility will be pursued, as it is a key link between external bibliographical information to the documents held in the Institute's Library. Furthermore, other external hosts do offer this service, so it is hoped that Silver Platter will expand its CD-ROM retrieval software to include this.

¹ See Diann Rusch-Feja: CD-ROM-Vernetzungsmöglichkeiten in der Max-Planck-Gesellschaft. In: Beiträge zum XVII. Fortbildungsseminar für Bibliotheksleiter/innen der Max-Planck-Institute und -Arbeitsgruppen. 27.-29. April 1994 in Heidelberg. Munich: Max-Planck-Gesellschaft, Generalverwaltung, 1995, pp. 67ff. (in print).

As it is self-explanatory, especially to social sciences librarians, elaboration of the well-known service of compiling subject, thematic and personal *bibliographies* will not be made here. With full automation of the library catalogs and flexible category systems or collection notes, such bibliographies can be easily produced as a downloaded by-product of the cataloging process - even with subject and title indexes.

While it is not a traditional service in many special libraries, *citation analysis* is a service performed in our Library and Research Documentation for approximately the last 8 years by two of the senior / research library staff. This included both studies to determine journal impact for specific research areas, aging and reception processes for journal articles in the social sciences, key publications for a certain project emphasis, publication impact of specific authors, representativity of certain disciplines in various databases, etc. As a result of a vacated position, the Institute directors have formally determined that this is a key priority for the future activities of the Library and Research Documentation. Various studies employing citation analysis, journal impact and peer review procedures (both formal and informal) are currently being planned. This means that in the future, additional Library staff will also be involved in support activities for bibliometric and scientometric studies.

In addition to this expansion of former activities which in themselves reflect the influence of the frequently quoted "information explosion" and move to enable the enduser to effectively and efficiently search for needed information himself, there are newer implications on the role of the librarian and the profession as a whole being posed by the impact of networked information sources outside the traditional bounds of the library and former online services.

Transition to Using Networked Information Sources

Networked information sources, especially those available on the Internet, are no longer "controllable" by the librarians whether in their access modalities nor in their organizational form. Where in the past, the librarian had a very good overview of the information resources *contained* in his or her library, and a generally good overview of the online databases and CD-ROM databases available for bibliographic reference, the new networked information resources are emerging from partially known sources (other library systems and catalogs, organized bibliographic databases, fulltext sources, etc.) and partially from totally unknown sources. Not only is their "location" random, discovered virtually only by serendipical search methods rather than traditionally ones, but they also lack formal

nomenclature and subject classification - at best, certain patterns are distinguishable.

New varieties of information retrieval instruments with diverse structures and usages are "popping up" daily in the Internet. Those which survive are virtually so new and sometimes necessitate additional technical facilities that librarians, still also responsible for fulfilling the same duties of the past, often lag behind the researchers, the undergraduate students and even the high school and grammar school students (in some countries). It has become increasingly apparent that information resources, even those traditionally coveted in the confines of the librarian's control are now so easily available to the users directly that the information retrieval processes are taking place without involving information intermediaries from the library - extending from information gathering the entire route to obtaining the document itself.

Whether the Internet challenges the principle meaning of libraries or the role of librarians or both, this new informational resource and its tools cannot be avoided: methods for using the Internet for research purposes must be integrated into the daily routine of librarians and their information gathering strategy. If they don't accomplish this, users will simply ignore traditional information mediaries such as librarians and bypass the library completely - at least in part and at least within the research setting. Much more could be said at this point on various opinions and suggestions on dealing with this problem. However, I will deal with just one aspect of it - namely, an aspect we are proposing for use at our Library.

Clearinghouse for Subject-oriented Information in Networked Information Sources

Within the vast variety of sources in networked information sources, information on specific topics is dispersed widely. The clearinghouse concept is based on defining a specific research interest and locating all available sources of information on this field of interest and bringing them together in a loosely structured form which would include:

Definition of Research Interest Folder and Introduction (using Clearinghouse Home Page and/or Internal Subject Page)

Subject Tree Connection

Pointers to Fulltext Sources

Pointers to Relevant Statistical Data

List of Key References

List of Research Institutions with this Subject Emphasis, Similar Research Projects, etc.

Periodic Summaries of Relevant Discussion Groups

Links To the Institution's Library Collection and Services
To the Researcher's Own Literature Database

The proposed clearinghouse concept is based not on duplicating databases or information or even inventing methods of classification for Internet resources, but on concentrating pointers to already existing sources - information dispersed in various forms within networked information sources (the Internet) - within a specialized, project-oriented subject field or fields.

Definition of Research Interest Folder and Introduction

Each research interest area in the clearinghouse at a given institution should be maintained in a "folder". If possible, this would involve using hypertext in World-Wide-Web (or similar) format on a server which could be accessed by researchers in the Institute and, if feasible, also by interested external users (especially if the clearinghouse is located at a special subject library or information center with regional or national responsibilities). In defining the research interest area, the researchers themselves will be key resources. As a service-oriented project, the clearinghouse concept is based on close coordination of the researchers' interests and focal points in their project. After formulating a definition of the research interest in cooperation with the researchers involved, it will be helpful to determine a set of descriptors for the information gathering process. Both definition and descriptors should be included in the introduction to the research interest folder to demonstrate the information gathering methodology. Of various research interest folders are being planned, the introduction could take the form of an *internal subject page* (on an already existing World Wide Web server) or, if only one research interest area is being pursued, a *clearinghouse home page*. The general clearinghouse home page should give further information on the services offered by the institution, including a list of the research interest folders (each with their own subject page) access to library OPAC, addresses, contact person, etc.

Subject Tree Connections

Pointers to existing, relevant subject trees and gophers could be listed here. In addition, telnet addresses to library OPACs with relevant collections for this subject would be useful, though they may also be included under "Research Institutions with this Subject Emphasis ...". Each listing should be annotated and the address per hypertext connection automatically initiated when chosen as a search facet.

Pointers to Fulltext Sources

Fulltext, electronic sources will increase in significance as the Internet services are expanded. Pointers to ftp-addresses with corresponding bibliographic information and preferably also an analytical abstract of the fulltext source should be included in this section. Since, however, addresses and resources in the Internet may not be the same from day to day or at best over a long period of time, important texts and documents in electronic form may be downloaded and archived for security reasons in the home server (if possible and feasible).

Pointers to Relevant Statistical Data

The same procedure for electronic fulltext sources applies to electronic sources of statistical data or other factual data which would be relevant for the research interest being considered. The statistical data of various countries and research firms is available on the Internet, though often with a price. Here, listings of not only a characterization of the data available, its size, selection criteria and scope, but also its price, date of collection and availability of adequate (value-added) software evaluation tools developed by the statistics-taking source to use with the data would be important supplementary information in addition to the Internet address (ftp, www, telnet, etc.). Here, too, a decision to archive this data purchase or use of this information may be desirable.

List of Key References

Key literature references for the research interest could be linked here with or without abstracts, source and holdings note. Several WWW-servers offer such services in connection with subject trees or subject-oriented sections. However, the evaluation of the references is based only on the frequency of appearance of this title or of works of this author in library catalogs or in the selected subject tree. Instead of this rather random method, scientometric methods should be employed to determine the "key references" for the individual research fields. In this way, a combination of citation analysis, determination of core journals for the field, content evaluation if possible, etc., could be implemented. The method of evaluation used should be described in a general overview of this category in the research interest folder (subject page or within this point).

List of Research Institutions with this Subject Emphasis, Similar Research Projects, etc.

This list should include not only the institutions with complete postal and electronic addresses, but also descriptions of the research projects, names and direct addresses of responsible contact persons, possibly the names of the participating researchers, dates and sponsors of the projects, abstract or project description if available and list of publications ensuing from the project (if possible with publi-

cation status and direct ordering address). The list of publications ensuing from the project (if possible with publication status and direct ordering address). The list of projects may also include doctoral dissertations in progress: Electronic access to national or regional databases of research projects in progress could be linked via hypertext within this section, or relevant information from such databases for this subject interest be downloaded for listing here with frequent monitoring by library staff for newly appearing projects.

Periodic Summaries of Relevant Discussion Groups

Since informal communication within networked information sources such as the Internet have taken on even greater importance for the individual research interests, an overview of relevant discussion groups for this area will reflect current ideas, projects and reaction to publications. The methodology for integrating this aspect in the clearinghouse concept would be to have the library subscribe to the relevant discussion groups (LISTSERV and mediated discussion groups) and the Library staff responsible for this research interest folder would peruse all entries in these lists and prepare a weekly summary of the topics covered, major participants and other relevant information for the clearinghouse folder or even forward important items to the researcher. These summaries should be immediately available via the research interest folder with a link to the original correspondence. The full correspondence in the discussion groups should be archived for future reference (especially if the responsible mediator at the mediating institution does not archive the list) in a server available to the clearinghouse. The summaries should also be archived separately. Periodic monitoring would update the summarized information.

The aspect of "filtering out" or "interpretation" of the content of the discussion groups make this an especially difficult point. In some institutions, this "filtering" out of information - separating the wheat from the chaff - may be welcomed, especially by researchers who want to follow the professional exchange in such discussion groups, but who can't take time to review the myriad of daily messages in even several lists. In other institutions, researchers may not find this filtering aspect useful, as they prefer to browse through selected discussion groups on their own. This may be a point which, if the clearinghouse concept is only established for internal use, could be eliminated. It may, however, also bind the time involvement for the information staff far too greatly for only sporadic results. This may be dependent on the filed and number of relevant discussion groups. On the other hand, in these discussion groups important points may arise which will also help the library information staff to follow up and obtain more specific information to add to that already in the research interest folder.

Links to the Institution's Library Collection and Services

The library's own call number for relevant journals and monographs cited should be linked with the references in the clearinghouse folders, possibly with a background program to check the user's status in the library and enable direct order of the needed document per email to the library. If the selected literature is not available in the institution's library, ideally there should be an option for immediate transmission of an electronic message including the bibliographic information to the library for further ordering from external sources. If feasible from the standpoint of institutional policy, this may also be expanded to include additional links to enable direct document ordering by the researcher, payable from his credit card or his project funds. However, the high level of diversity among suppliers of electronic document delivery services will usually necessitate a decision by the librarian who responsible for monitoring the various offerings of these firms and who is well acquainted with fineline differences in price, service and quality and can draw on long-term comparison and experience with such services.

Links to the Researcher's Own Database

Downloading of all selected information should be possible at least as a menu point if not spontaneously (hardcopy or downloading to one's own computer files). If possible, various relevant bibliographic citation formats (MLA, APA, etc.) for printouts and downloadings should be offered in the most frequently used database formats in the particular research environment (dBase, LIDOS, PROCITE, FILEMAKER, ENDNOTE, etc.).

The services of such a clearinghouse are especially useful in conjunction with a library or information center with a special subject area concentration or national responsibility for subject competence. They will also be useful for university libraries in a network with shared responsibility with other institutions for certain research interests or for special libraries in research centers. However, even in small libraries of specialized research institutes, the clearinghouse concept will assist the library/information staff in coping with increased demands on them in information provision. Although the time investment at the beginning of establishing such a clearinghouse folder is greatest, it is dependent both on the librarian's previous experience with networked information sources and on the dimension of the research area itself. The cooperation of the researchers in the field within the Institute will play an important in initially defining terms and establishing the research interest folder. Thereafter, the time needed for periodic update monitoring will be ca. 2 hours a month, depending on topic and excluding monitoring of discussion groups. Some of the monitoring may be able to be automated to carried out by library staff.

Conclusion

In view of the changes to be expected in special librarianship as a result of these developments in networked information sources, the demands on the profession must be redefined and considered for their significance. The rapid access to information sources forces us as information intermediaries to react quicker - even if old structures themselves are not ready for change (ILL networks, union catalogs, etc.). If the theory that the market determines the needs is still true, then librarians must become acquainted with the offerings of networked information and use them to their advantage within fulfilling the demands of the profession. Even if technology is moving so fast, librarians must keep pace - even if it demands fulfilling traditional tasks as well as learning to fulfill new ones with totally new instruments and sources. If we effectively market our products - including networked information - and services, we will be able to keep the market and interpret its trends. Thus, in closing, I would like to simply list the key aspects for change as a result of using networked information sources within the special library and information service profession - as I see them - with the following short phrases:

- Greater service orientation
- Greater technological capabilities
- More individualized value-added products and services
- Broader scope of activities
- Increased use of informetric and scientometric methods
- Ability to evaluate sources & services in view of (individual) users' needs
- Information management strategies rather than information collection skills

Within this context of operating in a world of both traditional and electronically networked information sources, I propose a new job description for the librarian, namely, as *information professional who functions as a dynamic interface between various information systems (library catalogs, library systems and library consortia, external databases, document delivery services, information sources in the Internet, etc.) and the information user.*

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FINNISH RESEARCH LIBRARY SCENE - COMPUTERS, COOPERATION, CONFLICTS

By Kyllikki Ruokonen

Abstract: This paper focuses on the history of the library system in a small country. It gives an overview of introducing data processing for Finnish research libraries and puts its emphasis on experiences made in the Helsinki School of Economics Library. The author also presents some information concerning HELECON on CD-ROM.

Background information

Finland is a northern country with ca. 5 million inhabitants where one third of the area is within the Arctic Circle. It has a decentralized university system with their library resources being available also for general public, not just for members of their own academic community. The country is officially bilingual, the majority (93%) being Finnish speaking and the minority (6,5%) having Swedish as their mother tongue.

Normally after 12 years of elementary education students have a chance to apply to university. Their selection is based on an entrance examination as well as a national grading system received from the secondary schools. Highest level of library science education in Finnish language is available at Tampere university where the first Scandinavian professorship in library science was established in 1971. Swedish language Åbo university is another university giving library science applicants in recent years. It takes ca. 5 years to get a university degree in library science.

Library systems

National library collects the annual statistic for the most important research libraries. These statistics include since 1940's 20 academic libraries which have the main responsibility for the scientific information supply in the country, and 28 specialized libraries. Altogether in 1993 these 48 libraries had some 17,5 million items in their book stocks of which the university libraries had ca. 15 million volumes. The local lending of university libraries was around 4 million items and the acquisitions 333.000 monographs.

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The *national resource library network* was created in 1970's and today there are 10 research libraries specializing in the following: business and economics, statistics, technical studies, medicine, agriculture, forestry, sociology and social studies, communication, sports, education and humanistic subject areas. These centers have responsibilities to collect the material in their speciality as widely as possible, to give service as well as interlibrary loans to all interested persons within the country and also abroad, to function as information centres for both the input and the retrieval of the material in their subject areas. Unfortunately these obligations have not been followed by increasing amount of finances. Taking into consideration the fact that the national research libraries are all except two also academic libraries connected with universities the terminology concerning them is rather mixed. National research libraries while being university libraries are at the same time special libraries in their subject areas for the public service. In all cases the parent organizations are the ones who totally decide the funding of the libraries. Today the big question is to what extent the financing will continue also to outside users as the recession in the country cuts considerably the budgets of the universities. All the academic libraries are governmental, there are no private universities in Finland.

The *university libraries* on the whole form the backbone of the library services for academic research in Finland. They provide 85-90% of the services given to all those engaged in scientific research, not only at the universities but in the whole country.

There are seven *legal depository libraries* which get all the printed publications of the country. There is also a *national repository library* in Kuopio. It acts like a huge, automated storage for older materials and all the libraries have the right to send there their older monographs and serials. The library was established in 1989 with 3100 m² and now they need more space for their growing volumes. Their annual intake has been ca. 5000 m/year. All the material is available in an online catalog and their interlending and copy-service is still free of charge.

Some statistics

According to the national library statistics the costs for all research libraries were in 1992 divided into:

- acquisition 31%
- personnel 59%
- others 10%

Acquiring textbooks for students required ca. 24% of all book acquisition finances nationally. The acquisitions were divided further to

	Books	Serials
purchase	50 %	36 %
gifts/exhchange	25 %	41 %
depository copies	25 %	23 %

The personnel costs have steadily kept going up, and this expenditure is the most difficult one to be accepted by the university administration. All recent statements and recommendations require diminishing personnel in governmental jobs - until now by natural reasons like retirement - not by dismissing persons. The budgets as a whole have been regularly cut during the last 3-4 years and the situation seems to continue for the coming years. The new demand urged by the Ministry of Education is that libraries should start rationalizing more their functions and earning money with their services. In 1993 a statute was made informing which services can be free of charge and which ones not! In traditional libraries this has been a big source of worries and reorganizations. Debates about the functions of libraries and equality of services for all customers are eagerly discussed. The Ministry had made strong recommendations for uniting small service points in large university library systems to make them more effective. This phenomenon of centralizing services is also valid in special libraries which often are privately owned and have been forced to cut their staff and acquisitions.

Perhaps an unusual feature in Finnish research library system is the role of inter-library loans. Our country has always been in receiving end of the operation. In 1993 all of the interlibrary loans given the number sent abroad was only 5%. On the other hand of all those received 20% were from abroad. One explanation is evidently that the Finnish language belongs to the so called Finno-Ugrian group to which on the western side of Ural belong also Hungarian and Estonian. The language group is tiny and does not have any worldwide importance. This means that international communications to and from scientific study and research are necessary with foreign languages historically and grammatically quite different from our's. On the whole the use of interlibrary loans, information retrieval for a fee and copy services have diminished considerably in recent years. One reason undoubtedly is that universities lost their free postage right and interlibrary costs have to be covered by the customers.

Library automation

Finnish research libraries have been using automated systems for more than 20 years. The first library investigation for the national automation policy was com-

pleted in 1972. The basic idea was to create a common solution for all research/university libraries aiming at flexible and multiple use of records once produced within the system. One of the prerequisites was a strict standardization which all libraries should follow. Also a joint planning unit for all research libraries was established by the Ministry of Education.

In 1984 the Ministry commissioned a study of data processing, and a recommendation for library automation for Finnish research libraries was presented.

VTLS (Virginia tech library system) was selected to be the national system for all 20 research libraries. It would have been impossible to get all the universities and other academic institutions to choose, on a voluntary basis, one and the same library automation system and to install it according to a common time schedule. The Ministry, therefore, provided central financing for the acquisition of both the hardware and the software. Universities in this way received their library automation system free as an additional resource. The Ministry took responsibility for the group licence of the software, for the purchase of the computers (Hewlett Packard), as well as the peripherals needed for maintenance of the local systems and conversion of the existing databases into the data structure of VTLS. The universities are responsible for the recurrent costs caused by system support, the service of the hardware and the staff time.

VTLS installation started with the National Bibliography which went online in May 1990 and its database FENNICA was opened for outside users. Altogether the installation of VTLS took several years to be completed (1989-93). It is used for cataloging, lending, interlibrary loan, reservations and sometimes for acquisitions. Each library can select what modules of the system they want to use.

The final result of the activities and financing of the Ministry of Education using the VTLS in Linda. It is the recent online union catalog of research libraries, most important and largest co-operative activity within the country. It covers the acquisitions of the 20 participating libraries - for some all their book catalog, for others only recent years. It is a co-operative project where the cataloging information made by one library or the National bibliographic institute can be used by other libraries, lending, and interlibrary loans can be executed, reservations made etc.

However, some libraries like Helsinki School of Economics Library (HSE) had started their own automation projects much earlier. In late 60's and early 70's union catalogs of economic and business periodicals were produced by computer. Thereafter the emphasis of automation was placed on information retrieval, especially of periodical articles and research papers. In 1977 HSE had two databases

(SCIMP and SCANP) which were available online in all Scandinavian countries 2 years later via SCANNET network. Today the production has grown to 8 online databases with national and international materials and 2 CD-ROMs. A good overview of Scandinavian databases is given in *Nord guide 1994* published by Scannet. According to it there were ca. 700 databases publicly accessible, and the largest subject group was business and economics. Shares of different types of Scandinavian databases have changed only slightly in recent years.

As a whole Finnish libraries are eager producers of their own databases. In 1993 there were 170 national ones publicly online: reference, full-text and numeric, and over 18 000 online searches were made by research libraries in 1992. There are some strong centers today like HSE, Technical university library and National library which produce many online databases for public use via national and international networks.

Finnish universities network (FUNET) functions under the control of the Ministry of Education. Its purpose is to connect various university networks and to act as a data communication means also for researchers in enterprises. Commercial activity is forbidden, but many separate computers have their own X.25, so the connection to PTT Datapak is possible, and from there forward to international databanks. Via FUNET it is possible to take contacts to INTERNET which is the "hot" topic of today. There is a lot of discussion and experimenting with the huge data resources it is offering. Everybody is excited about it! Many library catalogs, content pages of periodicals, full text publications, etc. all over the world can be used quite easily free of charge - at least for the time being.

CD-ROMs

CD-ROMs are also a recent invention which library customers have started to use with great enthusiasm. In Finland there is a union catalog of all CD-ROMs acquired by research libraries. Altogether it includes 253 different titles in September 1994. The most frequently repeated are Finnish national bibliography, Books in print Plus, a CD-ROM encyclopaedia in Finnish language and HELECON. The last one is the economic and business information co-operative product of HSE with information from different libraries in Belgium, Germany, Scandinavia, other Western European countries, China and South America in ca. 30 languages.

HSE was the first producer of library CD-ROMs in Scandinavia (1989). Today some others are also producing them; in addition to those mentioned there are disks in subject areas like technique, and labor protection. HSE has its own CD-ROM production in the university's own computer center with the American soft-

ware "CD-Answer" by Dataware. The service is available also to outside customers. The local use of CD-ROMs has diminished the need of foreign online services to some extent, even if foreign bibliographic databanks are available more easily than ever before. The students have seldom earlier been able to use foreign online services free of charge, but the use of CD-ROMs is almost always without any payment in libraries. Most universities have networks of their own where CD-ROMs can be placed. The problem of putting them into networks is usually not technical but the discs themselves: some of them can be used simultaneously only in limited multi-user environments. Others have such high licensing fees for multi-user purposes that they do not "invite" subscriptions, on the contrary.

Some libraries have always been closely connected with their foreign counterparts. HSE has participated in e.g. Scandinavian co-operative projects since 1950's by exchanging article references on cards, later in providing online databases and CD-ROM products. Latest example is a HELECON Nordic CD-ROM where contents consist of different databases produced at the schools of economics libraries in Stockholm, Sweden, Bergen, Norway, Aarhus, Denmark, HSE and Swedish school of economics in Helsinki. The same principle applies to willingness to produce national references for international services like AGRIS, INIS, or NORDICOM. Personnel exchange is one lively form of cooperation also e.g. between HSE and Czech Academy of Sciences in Prague or INSEAD in France of Manchester Business School libraries.

Conclusions

As the research libraries in many cases are automated to a great extent the customers have to learn how to find what they need with different technological systems and gadgets. Fortunately many students are quick in understanding modern technology and the huge possibilities it offers. The goal of information producers is to have various computer systems so simple that all necessary advice is given on the screen. Unfortunately that time seems to be still far ahead. The use of computerized catalogs for books, online information retrieval for periodical articles and INTERNET usage is taught in many libraries to customers as a part of their regular user education courses.

Geopolitical, historical and linguistic background in a small country like Finland influences strongly the need and use of foreign literature. Presentday economic and political unification developments in Europe force people to become even more internationally oriented. On the other hand knowledge of foreign resources and the ease and availability of telecommunication connections open immense new possibilities. Various conflicts are there because of intense requirements for more

"productivity" with less financing than before. The business idea of earning money with library services is also new to many librarians. Automation helps in rationalizing activities but the technological development is very fast. How do we keep up with all the changes that is the big question for the library personnel.

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DEMAND FOR NEW LIBRARY SERVICES AND THEIR CROSS EFFECTS ON EXISTING SERVICES

By Ekkehart Seusing

Abstract: In this paper the problem of forecasting the demand for new services and existing services is discussed simultaneously. When new techniques and new value added services are introduced into the market, it is very difficult to have reliable data to facilitate the forecasting. The main difficulty is due to the fact that each new service may have a cross effect on almost every existing service. Moreover, new services are likely to have substitutive and complementary effects on each other.

In the following the information services of the Library of the Kiel Institute of World Economics are outlined. The cost to the customer is incorporated and the clients' choice behavior since introducing data processing in the library in 1986. This will give a general idea of already arisen and future changes.

The paper concentrates on the services offered by the Library itself. The influence of services from other institutions is excluded. First for those who are not familiar with the Library, its essential qualities and its acquisition policy are summarized.

A. Main characteristics of the Library

1. Essential qualities

In 1966, the function as the Deutsche Zentralbibliothek für Wirtschaftswissenschaften - ZBW - (National Library of Economics in Germany) was transferred to the Library of the Kiel Institute of World Economics that is one of the leading institutes of economic research in Germany. Since its establishment in 1914, the Library has developed into one of the largest and most famous libraries for economic literature in the world. As a central subject it has the nation-wide function to collect, classify, index, and lend economic publications from all countries and in all languages to its national and international clients.

In the 1920's Wilhelm Gülich developed the fundamental ideas for a new type of library. In comparison with other libraries, the first distinction is the organization of the Library by regional units, and not by subjects, i.e. each working group is responsible for all activities in its regional area, such as collection building, clas-

sification, indexing. There are working groups e.g. for Latin America, or Africa, or the French speaking countries in Europe, or for Eastern Europe.

Another special feature of the Library had been its catalogue system consisting of seven different catalogues that were discontinued in 1985 by introducing data processing. Up to that year the catalogues were organized as follows:

- subject catalogue
- catalogue of geographic units
- bibliographical and biographical catalogue of authors
- catalogue of administrative authorities
- catalogue of corporations
- title catalogue
- shelf list of periodicals

These catalogues base on an indexing system that was developed from 1930 onwards to satisfy the needs of a special library in social sciences. Up to now the Library has its own thesaurus - the "Thesaurus der ZBW" - with a controlled vocabulary of more than 7,000 descriptors and 8,000 cross references.

A further characteristic of the ZBW is the indexing of articles in journals as well as contributions in collected works (such as conference volumes or Festschriften) since topical economic life is more frequently reflected in periodicals than in books. This activity started in 1935 according to the same cataloging and indexing rules as for monographs.

The quality assurance (controlled by the indexers) is given by selecting articles published only in scholarly journals and by selecting articles of long standing interest.

Besides the regional units, the system of catalogues, its thesaurus, and the indexing system - the information services have to be mentioned as they form a further characteristic of the Library according to Wilhelm Gülich. They will be described in detail further on

2. Acquisition policy

The acquisition policy of the ZBW concentrates on special literature in economics, including all economic branches and products. The area of collection covers all aspects of economics, world economics, and political economy, as well as a selection in business economics.

In detail the collection includes publications for economic research as follows:

economic theory
market theory
methods in economics
economy history
national accounts
economic policy
financial policy and the budget
capital markets and the banking sector
business cycles
labor market

competition policy
international economic relations
development and growth economics
research and development
regional planning
natural resources
transportation
demography
social security
educational economics

Besides these criteria describing the key collection, there are overlaps with other libraries in Germany, e.g. with the Library of the University of Cologne which has responsibilities within the German special subject fields programme for literature concerning business administration.

Literature on sociology, law, politics, or history belongs to the borderland of economics and is only acquired if an economic relation is obvious.

The same comes true for publications of inter-disciplinary literature and broad subjects such as family, women, household, children, culture, or environmental questions.

Economic statistics of central and federal states as well as theses form main issues of the Library's collection.

Additionally, the Library is especially interested in reports and statistics published by international organizations, public administrations, economic associations, chambers of commerce, banks, trade unions, political parties, as well as the publications of research institutes such as working papers, and the annual reports of the most important enterprises from all over the world.

Special emphasis is laid on non-conventional literature, approximately 60% of the stock belong to the grey literature.

The international field of the collection is reflected in the variety of languages: 43% of the stock are in English, just 25% in German, and 7% in French resp. in East-European languages.

The following indicators should give some statistical information about the importance of the Library. Its holdings amount to more than 2.3 million volumes. 18,700 journals and annual publications are processed per year. Articles from roughly 1,430 journals are regularly indexed, 149 of them cover to cover.

The card catalogues, discontinued - as mentioned above - in 1985 when introducing data processing in the description department, contain 9.2 million catalogue cards and are still at the clients' disposal.

In 1986 the Library established its own database ECONIS (Economics Information System) which in 1993 grew by around 71,000 records, including 24,607 monographs, 20,007 journal articles, and 2,730 articles in collected works. At the end of 1993 the clients could refer in ECONIS to approx. 505,00 records, including 179,764 monographs, 160.142 journal articles, and 25,259 articles in collected works.

B. Information Services

In the following the information services of the library are presented and their current situation, as seen from the point of internal competition, is discussed. The influence from outside services will be left out.

3. Electronic media

3.1 ECONIS online

At present approximately 175 clients are online connected to the database via the German Research Network. The search criteria are the same as for other clients of the Library: descriptors according to the "Thesaurus der ZBW", authors' names, key words from the title or free key words, names of corporations or organizations a.s.o. A combination of two or more of these criteria by using the Boolean logic is possible. In addition codes for languages, countries of publication, or for special kinds of publications such as bibliographies, statistics, or theses can be used.

Besides this access which is except for telecommunication cost free of charge for the researchers, the database ECONIS is offered by two commercial hosts: GBI (Gesellschaft für Betriebswirtschaftliche Information, München) and Genios Wirtschaftsdatenbanken (Düsseldorf). Both list a growing number of clients for ECONIS from month to month since this service is offered in January 1994.

3.2 CD-ROM

A CD-ROM version of the database has also been made available and ECONIS is at present offered by two CD-ROM producers. In 1990 the ZBW started the cooperation with the Library of the Helsinki School of Economics and Business Administration: "Helecon on CD-ROM" is combined index of seven major European databases, one of them is ECONIS. This product emphasizes European business and management information. The annual subscription fee of US \$

2.200,- includes updates every six months by replacement. In 1994 the CD changed its name to "Helecon CD-ROM International".

Since 1994 ECONIS is also available on WISO, a CD-ROM edition for economics and social sciences, produced in three parts. WISO II gives the complete bibliographical information from the ECONIS database together with selected databases from two other important German research institutes in the field of economics (HWWA in Hamburg and IFO in München).

WISO I gives business and management literatur whereas WISO III is concentrated on social science information. The annual subscription fee amounts to DM 12,000,- for all three discs. The price for WISO II only is DM 6.000,-. There are three updates per year. The CD-ROM is distributed by the commercial database producer GBI.

At present there are probably all together more than 60 CD-ROMs with the database ECONIS installed in German libraries. It can be presumed that these sales figures will grow in future. This fact will cause further changes in the library services offered by the ZBW as it will be shown later.

4. Printed medias

4.1 Bibliographies

In 1968 the ZBW became editor of the "Bibliographie der Wirtschaftswissenschaften" (Bibliography of Economics). Since that time the bibliography has held a unique position in the bibliographic control of economics. The extensive coverage of non-English publications, of publications from Eastern Europe, and from the Third World make this bibliography to an outstanding instrument for researchers and librarians. Two semi-annual volumes containing 20,000 titles are published, selected from the Library's annual addition of roughly 45,000 bibliographic units. The bibliography has an optimal currency, with volumes published in the year following the date on the cover. The annual subscription rate in DM 800,-.

Bibliographies concerning special economic subjects are published in the irregular series "Kieler Schrifttumskunden zu Wirtschaft und Gesellschaft" (Kiel Imprint of Economics and Society). The latest bibliography in this series is a complete list of Herbert Giersch's publications, a former president of the Kiel Institute of World Economics.

Since 1990 the also irregular published "Kieler Bibliographien zu aktuellen ökonomischen Themen" (Kiel Bibliographies of Current Economic Interest) have given lists of literature on economic questions of utmost importance. The latest

publications are bibliographical information on "Standort D" (a bibliography on the international competitiveness of the German economy), a "Bibliography on migration", and a bibliography on economic and business ethics. The specific titles are reasonably priced with DM 20,- for each copy.

The "Verzeichnis der ausgewerteten Zeitschriften" (List of indexed journals) has also to be mentioned. This irregular bibliography gives the journal coverage for the database ECONIS. A special marking identifies the journals that were indexed from cover to cover. This publication is charged with DM 32,- plus postage.

4.2 Other print products

The printed edition of the "Thesaurus der ZBW" consists of two volumes. It is a complete list of all controlled terms and all cross references used for indexing and information retrieval on the subject of economics in the database ECONIS. It is widely used by libraries and other information-related services. The introduction of new terms, and the revision of older, outdated ones, is done day-to-day. Because of the permanent revision of the thesaurus there are new editions on an irregular basis. The price is DM 150,- plus postage.

Another special publication is a study concerning the Library's information services and its effects on interlibrary loan in Germany. This study based on performance measurement criteria concentrates on the evaluation of the structure of the collection, of the information services, of the document availability, and of the regional market for interlibrary loan in Germany. The surprisingly high sales results of this very specialized publication are a reflection of the interest in our information services and our document delivery system. The selling price is DM 33,- plus postage.

4.3 Changed demand for printed medias

Comparing the situation within the last years the demand for printed services shows a mixed impression.

The traditional "Kieler Schrifttumskunden" which give bibliographical information on broad subjects of perpetual importance have never reached a marketability of more than 150 copies per series title. Contrary to this the "Kieler Bibliographien zu aktuellen ökonomischen Themen" have a circulation of more than 550 copies per title. The bibliographical information is printed out of the database ECONIS and reflects the discussion of an up-to-date subject. The decision to publish a bibliography in this series is caused by analyzing the discussion in the scientific community or in economic policy. Data processing gives the chance to answer the demand within a short time and without any grey outlay of manpower.

Online searches in the database ECONIS and introducing CD-ROM versions of the database in the market caused a drop in the circulation of the "Bibliographie der Wirtschaftswissenschaften". Within a few years the circulation dropped for almost one third. This cross effect of electronic services on printed medias is well known but nevertheless we have to think about the future of this bibliography. In cooperation with its commercial publisher the ZBW discusses how to improve it. Besides a new classification system, new selection criterias, and a revised list of periodicals consulted, a new marketing concept and a cost-reduction programm is discussed with the publisher. It is hoped to find a possibility that the bibliography will occupy its established place in the library world also in future times.

Since the introduction of online searches and of CD-ROMs, increased sales can be observed for the thesaurus and for the list of indexed journals. These publications are important tools for an efficient search in the database. The 1994 edition of the list of indexed journals were sold in 150 copies compared to 40 sold copies of the 1984 edition. Now it is planned to have a revised edition every two years. The same is true for the thesaurus which is published on demand, i.e. if there are more than five orders that cannot be fulfilled, a new edition is printed.

5. Selective dissemination of information

5.1 Kiel Card Service

Since 1960 the Library has produced quality catalogue cards for libraries, information centres and private individuals. This service has refined and expanded the Library's services throughout the years. In 1960 it resulted from the idea to make available the Kiel inventory of catalogue cards by increasing their production and sending them out to other libraries. The starting point for this service is the comprehensive collection of the ZBW.

The Kiel Card Service gives main entry cards (some with overprinted headings) according to RAK-WB (the German cataloging rules for research libraries). They include such data elements as main entry, statement of responsibility, place and year of publication, physical description, series statement, notes, and the indexing printed on cards of the international library standard format.

The selection for this card service is mostly made by subjects, regions, or a combination of both. Twenty percent of the clients requests cards for articles in journals only. This reflects the importance of the traditional indexing activities of the ZBW.

For the library has only to cover production costs for its information activities, the charges are very moderate. The price is DM 0,12 per card plus postage.

5.2 Information retrieval

Upon written request, the staff of the information department selects relevant titles from the database ECONIS or the card catalogues. A search is mainly done by subject, region, and/or time period; the "Thesaurus der ZBW" serves as basis for a search. On the average, thirty titles are provided to the clients requesting a bibliography. The list of the selected bibliographical items from ECONIS is sent to them. Cards selected from the old card catalogues are photocopied and the copies are mailed. The fixed fee for this service amounts to DM 20,-.

5.3 Printed lists

As another specialized information service on demand, the ZBW offers printed lists from ECONIS to its clients. The extent of these lists depends on the specific question and the number of items found in the database. A search can be done along the lines as mentioned for the information retrieval. The costs are DM 0,10 per bibliographical item but not less than DM 20,- plus postage.

5.4 Changed demand for SDI-services

Especially the Kiel Card Service suffers from the new medias. In 1981, the year with the biggest sales, this service had 120 subscribers and more than one million cards were sold. 1993 there were only 62 subscribers left which received roughly 154,000 cards. Although this service is not very expensive, the filing of the cards into the catalogues of the customers requires manpower. Manpower is expensive and more and more libraries implement electronic catalogues, use electronic networks or buy CD-ROMs. The information retrieval is so comfortable compared to card catalogues! This will result in small returns of the Kiel Card Service within the next years.

As far as the information retrieval is concerned, a declining demand has also to be observed. In 1987 3,347 written requests were answered with bibliographical information. In 1993 there were only 2,189 to be answered and this year a further decline is expected. The explanation for this development may be given by the increase in CD-ROM sales and by the growing number of online searches. Every important university library in Germany now has a CD-ROM enabling students and researchers to search by themselves in ECONIS. This is free of charge for them and they can search as long as they want to. Further we noticed that the individualized literature searches seem to concentrate on more specialized information that can only be fulfilled by a skilled searcher.

In September 1987, printed lists that give the clients a complete bibliographical compilation of their subject of interest were offered for the first time. In 1993 536 lists were produced and an increasing demand for this new library service is expected.

6. Document delivery

Clients in the ideal information scenario want immediate access not just to a bibliographic reference but to information: the journal article, the book. It should be stressed that the ZBW has all publications indicated by its different information services in its own stock, i.e. the Library is in a position to provide effective and speedy document delivery.

As remote catalogue access is improved by online and CD-ROM, the ZBW will be faced by increased demand for document delivery services. More and more the Library will be expected to deliver books and articles to distant customers. Journal articles can be faxed and sent fulltext to the customers. Books can be ordered and within reasonable geographic bounds posted to the end-users.

The Library offers a comprehensive package of document delivery services as follows.

6.1 Interlibrary loan

Interlibrary loan (ILL) is an intensively-used traditional service in German libraries. Since the end of the 19th century interlending has become inevitable due to the decentralized system of library provision. Education and culture (including library affairs) fall under the responsibility of each individual "Land" and, consequently, the political coordination is difficult and not always satisfying. The holdings of the ZBW can be used according to the conditions of the national and international interlibrary loan systems; i.e. national ILL is free of charge except for photocopies of more than twenty pages. As far as the international ILL is concerned, the clients have to pay DM 10,- for all books or photocopies of articles not published in Germany.

6.2 Direct ordering

Another well-established business is the direct ordering service for libraries, research institutes, enterprises, or other organizations: monographs are sent according to their requests. Articles from journals are photocopied, because bound volumes of periodicals or single issues are not mailed. For books the Library charges the postage to the client; photocopies are billed according to the scale of charges.

Private individuals are excluded from this service. They have to order monographs via the interlibrary loan along the lines as mentioned above. But they can order billed photocopies from articles in journals or collected works straight from the Library. They only have to mail a letter, no special form is required.

6.3 Online document ordering

The "Zeitschriftendatenbank" (Serials Database) is a union list of serials in Germany administered by the German Library Institute in Berlin. This database is

combined with an online ordering module and the ZBW is one of the suppliers of photocopies of journal articles within this system.

Online access to the Serials Database is via Datex-P. During the online search the client identifies the journal required. The system offers a list of the holdings' locations of the libraries which participate in online ordering. Now the client can decide which library he will ask for the copy. Having completed the online order the client has to mark for a rush or a regular order. The request is then stored in the order file of the database. Once a day they are called up by the ZBW via Datex-P. The rush-orders are processed and mailed the same day, the others within ten days.

A regular order is charged DM 20,- for an article with no more than 20 pages; for additional pages the client has to pay DM 0,50 per page. Rush-orders attract a surcharge of 50%. For orders from abroad the unit price is different and given on demand.

6.4 Fax service

For very urgent demands a fax service is offered to transmit copies of articles or selected pages from monographs or statistics. The basic charge for this service is DM 30,- plus DM 2,- per page.

6.5 Changed demand for document delivery

Within the last years these services had a very good performance. Interlibrary loan and direct ordering grew considerably. The last ten years show a growth rate of more than 30%. The online document ordering started in 1987 with no more than 69 orders. In 1993 the demand came up to 1,330 orders. In 1992 the orders culminated to 1,566. But in the beginning of 1993 the price for this service almost doubled: This decision and the worldwide economic downturn caused a decreasing demand for the clients of this service are chiefly information departments of large enterprises. In the meantime the orders reached the former level.

The fax service started in 1988 with 19 orders. In 1993 more than 100 orders were filled.

C. What can be expected in the future?

7. Final remarks

In the past many librarians ignored the use of their collections to a large extent. The Library of the Kiel Institute of World Economics, however, changed to a modern center for specialized information in economics. The shift from the conventional library to a progressive library and information center was done by the essential qualities especially developed for it, consisting of its system of cata-

logues, its thesaurus, the indexing of articles in journals, and the information services developed for the particular interest of economists.

Having evaluated the library services, losers and winners could be identified. Among the losers you find specific print products and the Kiel Card Service which only will survive as a small central cataloguing service. Its former importance is lost to new library services based on new medias.

Printed bibliographies such as the "Kieler Schrifttumskunden" can only survive in competitive markets, if the bibliographies will concentrate on highly specialized subjects such as a guide to statistics on labour productivity in Germany (see vol. 24 of this series). The other chance is to find niches for your products, i.e. to reflect current subjects for your bibliographies, right up to the minute. This marketing conception was followed quite successfully as it is proved by the sales figures of the series "Kieler Bibliographien zu aktuellen ökonomischen Themen". Another negative cross effect of new library services could be observed as far as the information retrieval upon written requests is concerned. This decline in demand can be explained by substitution effects caused by individual searches of the clients themselves in ECONIS via online or by using a CD-ROM. This tendency should not only be rated to be a negative performance but you have to see also the positive effect that the manpower in the Library can concentrate on other value added services such as individual, highly specialized searches or to support the reference department on the spot in Kiel during the last years. The greater service orientation causes a broader scope of activities for the librarians who are in a position to attach to special research projects.

The decline in sales of the "Bibliographie der Wirtschaftswissenschaften" was explained by substitution effects caused by new medias. But it has to be mentioned that this quite expensive bibliography in printed form also suffered from budgetary restrictions in German libraries within the last years. The above mentioned discussions with the publisher will help to continue the old success story within a new environment.

Other printed products such as the thesaurus or the list of indexed journals developed their sales volumes in dependence from new library services for these search aids are necessary to fulfill a successful search online or on CD-ROM. With the growing demand for our electronic products the sales figures for these complementary goods will grow, too.

The demand for new library services such as online and CD-ROM products has risen considerably. Within the last few years online and CD-ROM have reached an income from sales that exceeded the income from all traditional products substantially. And sales are expected to grow in future.

Through its printed and electronic bibliographical products the Library supports its document supply services. They are further winners of cross effects by new library services. The online information retrieval and the searches on CD-ROM allow remote users to search a range of the bibliographic database ECONIS covering almost 600,000 records in August 1994.

The increasing number of records will cause a year-to-year growth rate for the document supply services for every item that is indicated in ECONIS is available in the Library. In the near future it will be offered to order copies during the online search. This will result in a further increase of the document supply service.

It is necessary to identify the informity and imperfections of products and cross effects of new services. Following the analysis you will find a promising market for streamlined products. As shown the Library has to fulfil a wide range of responsibilities and to satisfy a large number of clients both nationally and internationally.

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PURDUE UNIVERSITY'S TECHNICAL INFORMATION SERVICE: PROVIDING INFORMATION TO BUSINESSES

By Suzanne M. Ward

Abstract: The Technical Information Service (TIS) is a department of the Libraries at Purdue University in Indiana. TIS started in 1987 with a grant from a state economic development agency to provide information services and document delivery for Indiana business decision makers. TIS expanded in 1989 to provide these services to companies all over North America and overseas. The TIS philosophy is that if executives have access to quick and accurate business and technical information and documents, they will be able to make better decisions. The positive economic impact of these decisions will benefit the individual company in the short run, but in the long run will also benefit the larger economy. Although TIS is partially funded by a grant from the state of Indiana, most costs for providing services are billed back to client on a nonprofit, cost-recovery basis.

TIS serves many types of clients in the business community, such as corporate librarians, inventors, engineers, marketing managers, company presidents, administrative assistants, entrepreneurs, secretaries, and lawyers. Some clients request information and documents for their own use; others request information which will be passed along to other people in their organization. It is a challenge to develop a marketing plan which will reach such a diversity of clients with such a wide range of different information needs. TIS staff perform database searches, provide document delivery from a wide variety of sources including the Purdue University Libraries, locate industry experts, and make referrals to university departments and governments agencies.

Many clients do not have technical or scientific backgrounds, but require technical information either for themselves or for others in their companies in order to make business decisions. Often clients call TIS because they have no idea where to start looking for this information themselves. Besides identifying and obtaining technical information and documents, TIS staff often spend time educating clients about the nature or use of the material.

Ms. Ward's paper was delivered at 59th IFLA Council and General Conference, Barcelona, Spain, 22-28 August 1993.

Business people have many different kinds of information needs. Some information needs can be met by talking with colleagues, by contacting experts at trade or professional associations, or by hiring consultants. However, there are two major kinds of information that many business people need but often do not know how to obtain quickly and cost-effectively. These two needs are for research information and for document delivery.

What are some examples of research information needs?

- a list of U.S. companies which manufacture corn oil
- articles about continuous manufacturing operations
- a list of patents issued to a competitor
- articles about designing windowless offices
- agricultural statistics for China
- articles about the moisture content of concrete

What are some examples of document delivery needs?

- a sample issue of a financial newsletter
- an industry standard
- an unpublished research paper
- a technical report from the Japanese Ministry of Transportation
- a regulation or law
- a conference paper
- a government technical report

Business people need to find quick answers to their questions or document delivery needs to make decisions in their daily work. The information they want may vary depending on whether the business is in the manufacturing sector or in the services sector. The needed information also varies by the kind of employee, such as president, engineer, research, scientist, lawyer, librarian, or office manager. Some workers need one or two pieces of information a year to help them do their own job. Other employees, such as corporate librarians or legal assistants, may want dozens of different documents per week to fill the needs of other people at their firms.

Employees of large companies may be fortunate enough to be able to call on the services of their own corporate libraries to help fill these information needs. But the vast majority of workers do not have convenient access to a corporate library or to a local public or university library which supplies the kinds of information they need in time to meet their deadlines. Even if these workers can easily visit a large local library, they may not have the time to do their own research.

Beginning in the late 1960's, a few university and public libraries in the United States, Canada, and Europe established separate departments called fee-based information services to meet the information needs of business clients. In general, the fee-based services operate on a cost-recovery basis and offer both document delivery and research services. Usually the fee-based services are staffed by library professionals and support personnel whose primary job function is to provide these services. The staff use the library collection at their institution to fill their clients' document requests. Most fee-based services will lend books to clients as well as make photocopies of articles. Staff also use outside suppliers, such as other libraries, information brokers, or commercial document companies, to provide documents which are not available locally. In addition, the professional staff search both online databases and printed sources to answer clients' research questions. Charges vary from one fee-based service to another, but in general there is a flat fee for article photocopies or book loans. Research rates are usually billed at an hourly rate for the information specialist's time, plus database charges. Rush handling fees are additional.

Since the 1960's the number of fee-based services in the U.S. has grown from a handful to several hundred. Fee-based services are located at academic institutions of all sizes, at medium and large public libraries, and also at the libraries of some trade and professional associations, such as the American Medical Association. The staff working in these fee-based departments are able to respond quickly to clients who are willing to pay for value-added services. With a fee-based service, libraries can help users willing to pay for fast, customized service without overworking staff in the reference department and without neglecting the library's primary clientele, such as the students at a university. The library is also able to recover the costs of providing the specialized services.

The Technical Information Service (TIS) is the fee-based information service at Purdue University in Indiana. It is a department of the Libraries. TIS started in 1987 with a grant from a state economic development agency to provide information services and document delivery for Indiana business decision makers. TIS expanded in 1989 to provide these services to companies all over North America and overseas. The TIS philosophy is that if business professionals have access to quick and accurate business and technical information and documents, they will be able to make better decisions. The positive economic impact of these decisions will benefit the individual company in the short run, but in the long run will also benefit the larger economy. Although TIS is still partially funded by a grant from the state of Indiana, most costs for providing services are billed back to clients on a non-profit, cost-recovery basis.

TIS started operating in 1987 on a small scale with one professional, a part time clerk, and a part time administrator. Important first steps included designing a brochure, designing an advertisement, and developing a marketing plan.

At first TIS staff concentrated on attracting clients in the Indiana manufacturing sector. Staff mailed brochures to Purdue engineering graduates who worked in Indiana. Staff also talked with reporters who published articles in the business sections of local newspapers. In many ways, generating business at TIS is very similar to the steps any new business would take to attract customers.

Since 1987, TIS has grown to meet the increasing needs of its customers. By 1992, staff had expanded to seven full time employees: three librarians and four support staff. TIS also uses about one hundred hours of student assistant time per week to fill document requests from fourteen different library locations on the Purdue campus. In 1987 TIS is filled a few hundred document requests every month; TIS now fills over 1,200 document requests per month.

Many U.S. fee-based information services are located in urban areas with a large clientele of local business. However, TIS is located at a university in a relatively rural area. The population of the surrounding county is about 100,00, not counting a student population of about 30,000. There is a correspondingly low level of business and industry in the immediate area. However, Purdue University is internationally known for its academic programs and research in engineering and the sciences. The Libraries' collection are especially strong in these subject areas. So while TIS cannot count on a lot of business from local companies, Purdue University's reputation and its Libraries' collections have been invaluable in helping TIS build a customer base of companies all over North America and from other countries such as England, France, Turkey, Australia and Korea.

What do TIS clients need? They want copies of documents of every description. Sometimes they have a complete citation; many times they do not. Sometimes they can wait a week to receive an article in the mail; sometimes they need a fax copy within a few hours. Many requests are for easily obtainable articles, but others are for unpublished or limited distribution "gray literature" items which are difficult both to identify and to obtain.

What kind of clients does TIS serve? Clients include corporate librarians, inventors, engineers, marketing managers, company presidents, administrative assistants, entrepreneurs, scientific researchers, secretaries, and lawyers. Some clients request information and documents for their own use; others request information which will be passed along to other people in their organization. It is a challenge to develop a marketing plan which will reach such a diversity of clients with such a wide range of different information needs. TIS professional staff perform data-

base or manual searches in almost all subject areas. TIS fills about seventy-five percent of document requests from the collection at the Purdue University Libraries. The remaining twenty-five percent of requests are filled by using other library collections, commercial document delivery firms, publishers, or information brokers. Staff also locate industry experts for clients when necessary, and make referrals to university departments or government agencies. In a few cases a client's information request will be so comprehensive that TIS staff suggest that the client contact a consultant.

Why do businesspeople use a fee-based information service like TIS? There are many reasons. Some people do not want to spend the time to find copies of even easily obtainable articles from local sources. It is much easier and more cost-effective for them to fax a request list to TIS and receive the article copies in a few days. These clients like the idea of working with a single supplier to meet all their document delivery needs. Other people do not have the first idea about how to get copies of even "easy" articles and prefer that TIS staff locate and send the items. Still other clients find local sources for "easy" documents and send only the "hard" requests to TIS. Most clients recognize that it is more cost-effective to pay for expert document delivery and research services rather than to try to do this work themselves or to make business decisions without the information. There are many times when an information search or copies of a few articles will answer a business person's question quickly; the client does not have to spend his own time doing research or hire a consultant to meet a relatively uncomplicated information need.

Many clients do not have technical or scientific backgrounds, but require technical information either for themselves or for others in their companies in order to make business decisions. Often clients call TIS because they have no idea where to start looking for this information themselves. Besides identifying and obtaining technical information and documents, TIS staff often spend time educating clients about the nature or use of the material. For example, some clients need help understanding the difference between a law and a regulation. Others are uncertain about the use of industry standards, especially now that international standardization is becoming so important. More and more clients are interested in tracking new technology and in tracking competitors' new products, but are unsure about how patent information can help them meet these objectives. Information professionals at fee-based information services such as Purdue University's Technical Information Service can

help business people learn how to use modern information strategies to make them competitive in both the local and the global economy.

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THE ION AND EDIL PROJECTS

By Christine Deschamps

Abstract: The author describes two projects for improving interlending services in Europe. The major objectives of the ION project are to achieve interconnection between three computerised library networks in the United Kingdom, the Netherlands, and France, in order to support and develop international interlending and messaging services; to improve the efficiency of international interlending services, and to demonstrate the capabilities of OSI communication protocols in a message-oriented environment for interlending services, by the interconnection of computerised networks with different technical characteristics.

The EDIL project will test the interchange of electronic documents between four European library networks. The experiments, based on previous standardisation work issued by the GEDI group, will demonstrate that electronic information can be exchanged through library networks by means of a common interchange standard, although these networks are based on different architectures and use different standards.

There are both projects co-funded by the Commission of the European Communities.

The ION Project

A Consortium of library service providers in the United Kingdom, the Netherlands and France have defined the requirements for an Open System Interconnexion (OSI) pilot/demonstration project between library networks in Europe for interlending services. The project arose from the Commission's call for a "declaration of interest" in pilot or demonstration projects designed to promote competitiveness and develop the information service market in Europe. It predates the "Plan of action for libraries in the European Community", but subscribes to the objectives and action lines included in it.

The participants in the project are

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- The London and South Eastern Library Region network (LASER), in the United Kingdom
- Pica Centrum voor Bibliotheek Automatisering, in the Netherlands,
- the Sous-Direction des Bibliothèques (SDB) from the Ministère de l'Education Nationale, now changed into the DISB from the Ministère de l'Enseignement et de la Recherche, in France.

The major objectives of the project are:

- to achieve interconnection between three computerised library networks in the United Kingdom, the Netherlands, and France, in order to support and develop international interlending and messaging services
- to improve the efficiency of international interlending services
- to demonstrate the capabilities of OSI communication protocols in a message-oriented environment for interlending services, by the interconnection of computerised networks with different technical characteristics.

The project, which started on 15 February 1990 and must last 4 years, is being co-financed by the participants and the Commission of the European Communities (DG XIII/E/3). The total cost of this development is 2579000 ECUS.

The programme is being implemented over three phases:

Phase 1: The specification of technical, functional and service requirements for the interconnection of three interlending networks.

Phase 2: The implementation and operational testing of the OSI communications-based ILL system

Phase 3: The use and evaluation of the system by fourty six libraries in the United Kingdom, the Netherlands, and France.

Phase 1 of the project has been successfully completed, and the go-ahead for the next two phases of the project has been given.

Phase 2 is almost entirely completed, the last tests are being currently made within the libraries.

Phase 3 has begun for some libraries, and international interlending will be performed within the libraries, with an evaluation phase to follow.

Overview of the project

To summarize, the international interlending services to be provided will be based on the OSI library standards developed under the auspices of the International Standards Organization (ISO): 10160, 10161, 10162, and 10163. However, for this project, it is proposed to implement only a subset of the ISO protocols. This

new international service will be integrated with the existing national services. The resulting network will therefore be a mix of proprietary and open systems protocols. As a basic principle, access to the international service will be via the project focal points in the three countries, i.e. LASER, PICA, and SDB, located at our host called SUNIST (Serveur Universitaire National pour l'Information Scientifique et Technique).

The main elements of the pilot consists of:

- The ILL and SR services as currently operated by LASER, PICA, and SDB/SUNIST on a national bases in each country
- selected test site libraries
- the new international ILL service
- the interface between the new pilot network and the present national networks.

Each focal point serves a library community through a national network infrastructure. Each infrastructure currently operates using different and proprietary formats and procedures. In the United Kingdom, LASER operates the VISCOUNT and ARTTel networks, in France, the ILL service is provided by the PEB system on the RENATER network, and in the Netherlands the PICA ILL service uses SURFNET.

The focal points have invited selected libraries to participate in project ION. These include key libraries such as the British Library Document Supply Centre, the Royal Library of the Netherlands, and the French CADIST libraries (Centres d'acquisitions et de diffusion de l'information scientifique et technique).

The international service is implemented at all three focal points by introducing front end processors (FEP). This approach minimises the changes required to the present computer system and offers the possibility of transporting the solution to other similar library networks in Europe.

A gateway concept has been developed to provide the interface between the OSI environment and the national systems. The gateway solutions at each of the focal points have a common interface to the ISO ILL service and local interfaces matching the requirements of each national network. The function of the gateway is to map the current national service to the new international one.

The project workplan

As written earlier, the programme is divided into 3 phases, definition and specification, implementation and the operational pilot service to test site libraries.

The family of specifications completed in phase 1 define all the aspects of the pilot systems, functional and system-wise. The lower layer of documentation, known collectively as the general specifications, details the ILL and SR subsets

from the ISO standards, the protocol mapping requirements and the preliminary requirements for the FEP solutions. These documents form the basis for the changes needed to the national computer systems and the detailed FEP solution. An interworking document was prepared as a high level specification, drawing together the concepts and requirements detailed in the lower layer specifications and providing an overall view of how the various elements of the pilot will interwork.

Interworking

Interworking is one of the most important issues of the project and a considerable amount of effort and care was taken to define the operation of the new service from user to user, across the different national networks. An Interworking Specification established the overall concepts and design and provided a framework for the development and procurement of the required elements of hardware and software.

The Interworking Specification deals with four main areas: service aspects, standards, ION model, and ION development. The last two forming the technical design.

The service aspects

For the user, the international ILL service will appear as an extra facility within the national system, and will offer new functions to issue and receive international ILL requests.

As we said earlier, each national system operates through a gateway (the National Focal Point). Focal points will be interconnected by X.25 links but from a user's viewpoint the new international service will be transparent of this network topology.

An international interlending service requires a number of roles and functions to be established and performed, as follows:

- requesters
- responders
- intermediary requesters (rerouting libraries)
- intermediary responders (rerouting libraries)
- verification centres
- technical intermediaries (gateways)

From the user's point of view, the ILL process operated as a number of distinctive steps: Firstly the item is identified and located, followed by the loan request, and finally the management of the items on loan.

- Item identification

For France, only the "messaging service" is supported. Dutch and English users will be able to use the CD-ROM "Myriade" to identify and locate periodicals. In the UK and in the Netherlands, an automatic matching module is implemented.

- Request handling

The loan request is submitted in the form of a message being moved from location to location. It leads to a response returned to the requester, indicating whether the item will be supplied or not.

- Loan management

The loan management for local, national, and international loans is done in local systems or manually. The following step of electronic delivery will be addressed by the EDIL project.

- Routing and circulation

Routing of international loan requests will be through the respective focal points, and routing within each country will be different, reflecting the different infrastructures.

Regarding charges, a uniform approach is likely to be adopted with a fixed price charged for loan (monographies) and photocopy (periodicals). Charging will be part of the overall management responsibility performed by the ION consortium and libraries will not charge each other directly.

Standards

As mentioned earlier, the standards available for library services are developed by the working group TC46/SC4/WG4 of the International Standard Organization (ISO). Two groups of standards are produced, one for ILL (ISO 10160/10161) and one for Search and Retrieve (ISO 10162/10163). The SR standard is used for the search and retrieve facility implemented only at LASER and PICA.

These standards are now stable, but formal conformance testing is not yet available from accredited test houses, and the Front End Processor is regarded as being at the leading edge of this technology.

The FEP

The FEP concept provides a gateway allowing a degree of interoperability between the present library infrastructures. The communication protocols operating between the three FEPs conform to the selected subset of the international standard, and gateway software located in the national host systems convert the standard protocol to be compatible with that used by the respective national infrastructure. It acts as an intermediary, so that the transaction is considered to be "partitioned".

The FEP provides a connection between the national ILL and the outside world. The users, regularly working in their known national (or regional) ILL system, enter the international world issuing a request. For the UK and the NL users, before entering this ILL system to issue the request, they are allowed to search in an external, international database. The French organisations do not participate in this function. The gateway software process the national requests, and handle incoming international requests. In other words, on the side of the ILL service provider, the gate takes the initiative to invoke or to receive services.

The technical design

The ILL and SR applications have been designed as portable packages running on UNIX platforms. For ION, 3 different architectures are implemented.

In the UK, the FEP is implemented on AEG MODCOMP 9730 hardware running AT&T's system V, Version 3, UNIX operating system.

For the Netherlands, the hardware platform is Digital's MICRO VAX 3100 running the ULTRIX version of the UNIX operating system.

In France, the FEP is an IBM RS 6000 model 320 running the AIX version of the UNIX operating system.

The different platforms demonstrate the portable nature of the project.

The ILL application uses a store and forward carrier mechanism based on the 1984 CCITT X.400 recommendations, and the international standard ISO 8824/8825 ASN.1 syntax and encoding rules.

Once a connection has been established, the SR application is an interactive process between the user and the connected union catalogue. The SR application uses a full connection oriented OSI stack for communication and the UNIMARC format for the transfer of bibliographic records.

Performance and Capacity

For ILL transactions, the FEP:

- provides a capacity to hold at least 50 000 transaction history records
- allows at least 100 new transactions per day per site to be created
- introduces less than 1 second delay

For SR, the FEP:

- supports multiple search sessions
- provides a minimum throughout of 32 concurrent sessions
- introduces less than 0.1 second per message

Management facilities provide system administration, configuration and error reporting. Statistical information is extracted from the system using the SQL package (Structures Query Language).

Wide area network infrastructure

The COSINE IXI network is currently used to link the three sites. The three FEPs use the same software package, ported to each environment. Some differences in interface requirements have resulted from the use of different platforms.

The FEP for France is connected through X.25 to the French academic network known as RENATER, and to the French national system through IBM's HCON 3270 proprietary terminal protocol. The standard EDIFACT syntax is used for the ILL data carried over the HCON link to the French national system, which forms the main hub of the french PEB interlending network.. At the other side of the French FEP, the ILL data is manipulated in ASN.1 syntax, and carried as an X.400 body part over the X.25 network.

As the interface to the UK system, the TCP/IP LAN protocol is used over a standard ETHERNET link. Like the French FEP, ILL data is also encoded in the UK using the EDIFACT syntax. In addition the UK FEP contains the SR application and SR data is also encoded using the EDIFACT syntax over the FEP to the national system link. This SR application utilises a full 7 layer open system communication stack to establish a connection-oriented association with other sites. Multiple SR associations can be run concurrently with the ILL service. At the network side, the FEP is connected by CCITT X.25 to the academic network JANET, providing access to the COSINE IXI network. The ILL data, encoded in ASN.1, are carried over the network by the store-and-forward protocol defined by CCITT X.400 recommendations.

For the Netherlands, the FEP is identical to the UK, but runs the ULTRIX version of UNIX as developed by Digital. The X.25 interface to the academic network SURFNET requires the Digital DEMSB router.

User evaluation

During Phase 3, the international pilot service will be operational. During this period, the users of the system will evaluate the service and the system (the users will have received training during Phase 2).

The user will have to receive information about the following points:

- Need for this project
- Collections promotion and awareness
- Access to the appropriate resource centre
- Availability of material
- Systems communication quality
- Finance matters (the funding of the project)
- Documentation produced

User evaluation will deal with three main areas:

- Evaluation of the training and documentation
- Evaluation of the pilot system
- Evaluation of the pilot international lending service

The evaluation methodology will be a mixture of statistical data gathered from the national systems and the prototype machines, subjective opinions gained from written evidence or interview techniques, statistical comparisons from other sources.

From the evaluation results, we hope to find justification for the whole project, and for the mutual efforts from librarians computer scientists and technicians who have learned to work together, and to understand each other. This in itself makes it already worth while.

The EDIL project

The EDIL project has started only last January 1993, and therefore, there is less to say about it in terms of realisations. I can only give an outline of the project.

The EDIL project will test the interchange of electronic documents between four European library networks. The experiments, based on previous standardisation work issued by the GEDI group, will demonstrate that electronic information can be exchanged through library networks by means of a common interchange standard, although these networks are based on different architectures and use different standards.

The design of the EDIL Electronic Document Delivery system will be based on the analysis of user requirements, on the existing national systems both for ILL and document supply and on the previous GEDI "standards".

The experiments will be made with four or five libraries and the document supply centre, if any, of each network involved in the project, i.e.: the PICA system in the Netherlands, the British Library Document Supply Centre in the United Kingdom, the former Ministère de l'Education Nationale, now Ministère de l'Enseignement Supérieur et de la Recherche, on one hand, and INIST on the other hand, in France, and the Universitätsbibliothek und Technische Informationsbibliothek of Hannover in Germany.

Moreover, the Fundação para o Desenvolvimento dos Meios Nacionais de Calculo Científico, of Portugal, is responsible for the project information dissemination.

The evaluation of the experiments will allow the verification, the modification as necessary of the operation of the EDIL system and the planning of its extension to other European and International library Networks.

Objectives of the project

The EDIL project is a pilot implementation of the interchange of documents in electronic formats between the four private domains of the 4 partners. The major deliverable from the project will be a relay implemented on four hardware platforms interworking between the electronic document delivery systems operating in France, Germany, the Netherlands, and the United Kingdom.

An important secondary aim will be the dissemination of information about the interchange relay to all interested institutions both inside and outside Europe.

EDIL will apply ISO standards with the use of FTAM protocol, and a de facto standard, the TIFF format. The project will also test the use of the standards adopted in the GEDI agreement for document delivery. As mentioned in the GEDI report, the evolution of standards will be looked at by the GEDI group to update the agreement as necessary.

The Partners will exploit the common EDIL requirements and results at several levels. Some are more general and policy directed, such as:

- an infrastructure will be developed which will provide the partners with a platform to take a lead in ensuring that Europe plays a major role in the development of world wide document delivery business. This is expected to grow by several orders of magnitude over the next 20 years.
- European standards will be developed and tested enabling both private and public sector bodies in Europe to work in cooperation and alliance in the exchange of electronic images
- The rapid integration of Eastern Europe within the Community will be facilitated by a structured and effective trans-border document supply mechanism. The EDIL project can be exploited as providing a foundation for integrated information and document supply service within the whole of Europe as it stands and as a stimulant in its growth.
- If Europe is to complete in both attracting industry from Japan and the United States and in developing a research environment in which such industries can thrive, it will be vital for these countries to have a sophisticated document and information retrieval and delivery system to maximise their innovative capacity. EDIL can be seen as the first stage of such a system.

Project Description

The basic model for library document interchange on an international scale consists of two levels of functionality:

- the national level on which libraries within a country are functionally inter-connected
- the international level in which national infrastructures are interconnected

The communications which are needed to support that service involve both communication on the national and on the international level. As national systems are in operation, only the communication between international nodes is involved in this project and will be described as part of the GEDI domain. The task of this project is to interconnect the existing national systems at the international level, each national level carrying out the necessary modifications to enable the necessary interconnections.

To provide a complete delivery service, several issues have to be addressed, all of which are relevant to the complete delivery cycle of electronic document delivery.

1. Identification and location

This is done through the use of automated catalogues (online or on CD-ROMs) or printed catalogues.

2. Ordering

The use of the functional elements of the ISO ILL standard is recommended as a guideline for the document identification and request.

3. Digitalization

This will be done through a scanning device

4. Interchange

This will be explained later with the EDIL general architecture description

5. Hard-Copy reproduction

This will be done through a printing device (on Group 4 facsimile facilities or on high resolution printers)

6. Billing, accounting and other administrative procedures.

Only two functions will be addressed in the EDIL project, the interchange and some administrative procedures. (The automation of the document request is not in the scope of the EDIL project.

EDIL general architecture description

In order to interconnect the different networks, a relay will act as an interface to the GEDI domain in each national private domain. These relays will be connected to their national domains and to the IXI international academic X.25 network through national nodes.

A national domain is a group of one or more suppliers and one or more consumers within a country, which is capable of engaging electronic document interchange transactions between them, and where a common agreement exists in the area of: document compression algorithm, document interchange format, document transfer mechanism, and network technology.

As international domain is a group of suppliers and consumers within more than one country, which is capable of engaging electronic document interchange transactions between them, where a common agreement exists on the same areas as in the national domains.

The EDIL domain is a group of suppliers and consumers in the EDIL partners' national domains, which will be enabled to engage electronic document interchange between them, by means of the functions provided by the EDIL relay, built up in accordance with the GEDI agreements on the same areas.

The EDIL relay is a component in hardware and software to realize the interconnection between different domains of electronic document delivery in France, Germany, the Netherlands, and the United Kingdom.

The functionality of the relay can be divided into three layers:

- Communication with the national domain (RECEIVE and TRANSMIT)
- Forwarding between 2 domains (FORWARD)
- Communication with international domain (RECEIVE and TRANSMIT)

The communication with the international domain will follow the GEDI agreement, using FTAM over OSI and X.25.

For the communications with the national domains, several interconnection scenarios will be implemented. The following possibilities are being considered:

1. FTAM over OSI and X.25 (Netherlands, Germany)
2. FTP over TCP/IP (Netherlands, Germany)
3. A file transfer mechanisms over ISDN or X.25 (France)
4. X.400 over OSI and X.25 (U.K.)

The major characteristics of the EDIL relay are:

Network connections:

Network connections to the existing national infrastructures should be supported using standard interfaces. In case of a national infrastructure based on X.25, both the national and international communications should be supported on a single X.25 device. International communication should be possible over IXI.

Operating system environment:

To allow for a single software development exercise in the EDIL project, a single operating system environment should be selected. UNIX would be a logical

choice. The type of UNIX is probably dependent on the hardware platforms, possibly more than one type has to be supported.

Software:

The software implementing the relay functions should provide the necessary routing and statistics functions and be portable and modular. All four relays should be able to use all four national domain variants. The design should allow for the later inclusion of document conversion facilities. The software should use off-the-shelf packages as much as possible, especially for the communication protocols. Preferred programming language is C.

The relay software should include facilities to make the relay a secure, robust and operable subsystem by providing adequate security mechanisms, error reporting and handling, and system management. It has to provide adequate performance for the amount of traffic foreseen in the project. The design should allow for the future growth in traffic, in the number of relays and in the number of different types of national infrastructures supported.

Databases files:

Any data bases required, e.g. for routing tables and statistics collection, should be relational packages with SQL interfaces.

Acceptance requirements:

The relay software should contain adequate facilities to demonstrate correct operation in an acceptance test situation, and have facilities to simulate error situations to demonstrate sensible behavior in the case of errors.

EDIL partner are just now designing the users requirements and the first outlines of the technicalities. It is difficult to go more into detail on EDIL before a few months have elapsed. Any further information should be required from the portuguese partner who is responsible for information dissemination, and who will regularly organize publications and meetings to that purpose. All I can add is that, if, as we certainly hope, both ION and EDIL are successful, and if it is possible to integrate EDIL into ION, in order to have the whole chain of document requesting and delivering automated and available between different system platforms, it will be a great progress for all libraries, and it will certainly help to get universal availability of publications, which is, as we all know, one of the major core programs of IFLA.

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