NEW DEVELOPMENTS IN LIBRARY SERVICES AND TECHNOLOGY:
MODERNIZATION OF INFORMATION SERVICES OF THE PARLIAMENTARY LIBRARY OF THE CZECH REPUBLIC*

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Abstract: This paper will cover the comparison of services in the area of reference work and general library services in a traditional library, an entirely automated library, an electronic and "a virtual" library. This discussion is followed by a description of the digitization of the card catalogue (a retro-conversion project) and of the parliamentary papers in fulltext (a project called "Electronic Library -- Czech Parliament"). The paper concludes with a description of a project for creating a knowledge-based access system for users of the Parliamentary Library.

The information age, as compared with post-industrial society, is characterized by the fact that it will deal with material less and less, and with information more and more. To illustrate the point: while one production unit 20 years ago consisted 80% of material and 20% information, the current situation is the other way round. Or, to put it in a different manner: If you wanted to sell your body as biological material, you would get about 7 USD in New York. Most of your body is water, a little calcium and a few more valuable trace elements. However, if you wanted to sell your genom, i.e. your genetic information, to a laboratory, you would get 7,000 USD.

There is another way how to dramatize the point: the story is told that a man's car breaks down. He is lucky that it happens very close to a village. So he knocks at the closest gate and asks a villager: "Do you know something about cars, please? My car has just broken down." "Well, I am no car mechanic but I can have a look at it," the villager says. He takes a screwdriver, puts up the hood, looks inside for a while and tightens something. He says: "It should be O.K. now." The car really works and the driver says with a happy voice: "Thank you so much, you've rescued me. What will it cost?" "It's no big deal," the countryman claims. "But I will be pleased to give you some money. Just say how much," the driver insists.

"All right," the villager agrees, "give me a hundred dollars." The answer was quite surprising for the driver. "What? A hundred dollars? You just tightened a screw!" "Do you want a bill? I will write one for you," is the answer. "I am really interested in that," the owner of the car cries. The villager writes: "Tightened screw - 1 dollar, knew which one - 99 dollars".

That is what the new age is about. About the ability to choose the right information at the right time. To know when, where and how to search, and how not to discover the already discovered. For librarians it means that we have to supply our users with the information they demand, in a form they want, at the moment they need it and to a place they require it to be. What a library as an information institution may offer or what it wants to do is not the key. The key is what is demanded.

Thus, we are getting to libraries as such. The information society is undergoing stages of development similar to the developmental stages of the library-- moving from the traditional library, to the automated library, to the electronic library and on to the "virtual" library. In this process, its historical form, main objectives and range of services are also changing quite dramatically.

To make it clear, we can visualize from our experience the differences between the developmental stages. A traditional library is full of printed documents, readers, librarians and cases with catalogs. An automated library, which provides access to its printed documents through its On-line Public Access Catalog (OPAC) and which has carried out a retro-conversion of its card catalogs, is not physically equipped with catalog cases (in some libraries, their original front boards are used as a wall-paper). An electronic library, which is connected to the Internet through which it provides access to its digitized (originally printed) book collections in an electronic form, does not physically keep shelves with books and periodicals. The library is getting smaller visually. A virtual library, as it is known, does not actually exist physically so that it does not need any librarians. Its information resources may be spread throughout the whole world, its information is not gathered. Access to the information is provided in the place and at the time of its origin. Thus, there is only a relation between the producer (author or data source) and the recipient (reader or user) of the information. In the traditional role of a librarian as a keeper and provider of information becomes completely superfluous in this situation. We do not know when this state described will be reached, or whether it will ever happen.

What we know and have to bear in mind in our work is that typical library services, such as keeping a catalog and lending books, are losing their original primary significance in an electronic (digital) library to which all of us are now

moving. In practice, it is apparent in the decrease of the number of registered book-loans and book readers. At the same time, there is an increase of the number of users (consumers of information) and requests answered. This trend will get even stronger because:

(1) the development of information services goes from providing secondary bibliographical information towards factual and full-text information and from gathering documents at a point in time towards providing information 24 hours a day,

(2) commercial transfer of documents is often carried out directly between the company which produced the document and a target user. It constitutes a source of powerful competition for libraries.

Generally, electronic libraries are characterized by three main features:

• flexibility and openness of their integrated library systems,
• bilateral (client/server) connection to the Internet,
• creation and use of databases and full-text electronic (digitized) documents.

To be more precise, the hallmarks of fully electronic libraries in the opinions of experts are as follows:

· the library is user-oriented, its main purpose is satisfying their users' demands for information,

· book collections are designed to meet current information requirements; most of the libraries (except for those with a specific function) therefore do not have any old collections or keep them only to a limited extent; unused literature is put aside or kept in deposit collections,

· the library provides access to a wide range of information sources, including on-line databases, information on CD-ROMs and services of the Internet, regardless of the medium used,

· the library provides access to external information sources and service is an integral part of providing information for users; it emphasizes that user access to literature and information sources of all kinds is more important than keeping them directly in the library,

· bibliographical description is not complete in a traditional sense; main descriptive cataloguing (i.e. author catalogs) is only transferred from the external catalog systems; a large emphasis is, on the other hand, placed on subject processing (subject catalogs) and document indexes,

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·   the library provides as wide a range of information services and various related supporting services as possible; a librarian becomes more and more an information advisor rather than a mere book lender.

Starting Point for Development of Information Services of the Parliamentary Library

Let me use the Parliamentary Library of the Czech Republic as a specific example of this transition process. We identified electronic information services that we would use as the basis for future development -- and provided for the introduction of these services in stages:

(1)   Introducing OPAC (On-line Public Access Catalog) and other secondary electronic information sources concerning book collections, plus catalog retro-conversion,

(2)   training on searching methods in databases,

(3)   creating manuals and guides for databases and other information materials, in printed as well as in electronic form,

(4)   assisting with the information of the inquiry and with the choice of a proper searching method and strategy of background research for each type of information source,

(5)   helping with printing background research findings and data downloading, if needed,

(6)   helping create a personal bibliographical user database,

(7)   doing background research on on-line bibliographical, factual and full-text databases,

(8)   introducing databases in the library for different target groups of users,

(9)   offering individual information services of the Current Contents and SDI type,

(10) introducing readers to using the Internet; each information specialist in the library becomes an Internet librarian,

(11) creating a meta-information system of a cognitive type which in its interactive mode enables its users to get all the relevant information available, regardless of the place of its storage, media type and collection type of library materials (book collection, computer database); if the system is not able to provide the necessary document or information directly, it has

to provide sufficient references to other information resources, persons, etc. which/who enable the user to get the primary document or information.

(12)   converting unique and special library collections into an electronic form.

(13)   information service through E-mail.

I would like to discuss three tasks in more detail. Their implementation shall be a major step forward in the services of the Parliamentary Library and in its computerization.

Card Catalog Retroconversion

Retro-conversion of card catalogs, i.e. their conversion into an electronic form, is one of the basic conditions for completion of full automation of the library and, at the same time, one of the conditions for full connection of the library to information networks on a national as well as international level.

The Parliamentary Library of the Czech Republic has about 200,000 volumes of printed items registered in its card catalogs. They have accumulated from the library's establishment in 1857 until 1993. The library has not continued in maintaining its card catalogs since the Tinlib integrated library system was set up on January 1, 1993. It gives access to all its documents through OPAC. At the same time, we decided to re-catalog all items gathered since the "Velvet Revolution" in 1989 in Tinlib and make them available through OPAC. The so-called "live collection" has been re-cataloged for three years, simultaneously with the mentioned library-wide re-cataloging books from 1989-1993. This means that each book-loan of an older document triggers re-cataloging this document in Tinlib, which makes it part of the inventory of the electronic on-line catalog.

Because it was clear that it would take over ten years to form a common on-line catalog in this manner of re-cataloging each book (only 1.5 person years of our labor force re-catalogs names in Tinlib in our library, the whole library having only 14 employees), we have decided to convince the Members of Parliament and management of the Chamber to provide us with the financial means for retro-conversion of card catalogs. We succeeded at the end of last year. The Permanent Committee of the House of Parliament for Activities of the Office of the House of Parliament decided on November 6, 1996 to grant 1,000,000 CZK (about 33,300 USD) to the library for retro-conversion of the library's catalog in 1997. We conducted a survey of the financial demands of the project from private companies (including OCLC) dealing with these activities. The survey has shown that the price of conversion of one catalog card into an electronic form ranges from 3 to 40 CZK, depending on the method and degree of perfection of the technology of

retro-conversion used. Considering the book collection has 200,000 items, the costs would be from 600,000 to 8,000,000 CZK. Since we have only 1,000,000 CZK at our disposal, we are trying to decide between two alternatives:

(1) to have an external supplier scan the whole catalog only in the basic "picture" form (what is on the catalog card is in the same form available to all users in their computers, they may search just like in a traditional catalog), the price being 3 CZK for a card. The remaining money (about 400,000 CZK) shall be used for complete retro-conversion of about 10,000 cards, or

(2) to have an external supplier carry out complete retro-conversion for 1,000,000 CZK, i.e. scanning, conversion of the record into a text form and tagging (structuring) into the exchange format Unimarc. The complete retro-conversion would be performed only for about 25,000 cards, i.e. 1/8 of the whole catalog.

The selection procedure of the supplier shall be held during the second quarter of 1997 as specified by the Law on Public Orders and this whole stage of retro-conversion shall be finished by the end of the year. No matter which of the above mentioned alternatives is chosen, it is certain that we will have to continue it in the following years, taking into account our financial means. The author of this report prefers the first possibility. Its implementation would enable physical removal of catalog cases and gain some free space for enlargement of the reference collection of the study room with other needed books which cannot be displayed now.

Meta-information System of Cognitive Type

The Parliamentary Library is launching a new venture in applying advanced automation techniques and artificial intelligence in improving search techniques for clients. When completed, the meta-information system will enable readers to search and obtain information regardless of where it is stored (geographically) or how it is stored (books, documents, films, databases). If references cannot be found, the system will provide leads to people or places where further information can be located. This new service is currently being prepared for Members of Parliament and Senators of the Parliament of the Czech Republic in cooperation with the Department of Information Technology of the Office of the House of Parliament. Some preparatory steps of this very demanding task have been implemented already. A survey of parliamentary libraries worldwide has been conducted, its objective being whether they are currently considering implementation of a meta-information system of the mentioned type. I would like to thank all my colleagues who took the effort and filled in our questionnaires.

We sent our questionnaires to 37 parliamentary libraries last year, 22 of them replied. Replies received from Poland (the Senate as well as the Sejm), Finland and New Zealand were the most interesting ones. We are very likely to address our colleagues in these countries and ask them for consultations this year.

In our republic, we have established a close cooperation with the Department of Cognitive Engineering and Information Studies of the School of Economics in Prague which, after many discussions, prepared a study of about 50 pages called "Intelligent Searching in Information Resources" during 1996 and at the beginning of 1997. The Director of the Department of Information Studies and Library Science of the Faculty of Philosophy of Charles University in Prague did a critique of this study. The content of the study follows in brief form.

Introductory sections of the study analyze the current situation: the structure of typical requirements of users, as well as internal and external information sources of the Parliament and their use in accordance with surveys conducted in March 1996 and January 1997. The next section deals with general trends in the development of heterogeneous information systems with an emphasis on integration of information services and the influence of the Internet on information systems.

The proposed structure of the parliament's meta-information system is based on a division of the system into three hierarchically separate levels. The highest one deals with user interface and is carried out in the WWW environment. The medium level, the meta-information system itself contains user support and use of a thesaurus to make searching easier. The lowest level involves the language and technical interfaces with individual information sources.

The next section deals with the role of the EUROVOC thesaurus (a multi-language thesaurus of the European Parliament dealing with many fields) in the information system of the House of Parliament and its integration into this system. The next part of the study describes the attitude to current information sources and gives some recommendations aimed at improvement of their use, especially by means of establishing a meta-information system on the basis of SGML. It is proposed to extend the structure of documents of the House of Parliament, which have been stored as non-structured text files, with structural information. The computer language SGML would be used. It would make searching for linkages and related documents easier.

The section that follows deals with searching for information in the Internet and gives recommendations for the information system of the Parliament concerning the strategy of access to information sources from the Internet. They include:

creating and keeping a specific list of information sources (a global list of suitable main pages of WWW servers) for the purposes of the Parliament, a specific list of information sources related to coming events and discussed bills, and a list of high-quality and confirmed searching engines.

The study concludes with a section dealing with the possibilities of implementation of artificial intelligence methods to support the users. Three methods of support are proposed: an expert system to create menus dynamically depending on the user, an expert system for searching information sources, and the use of an intelligent WWW agent.

It is not a short way from the study itself to implementation of even a small part of a meta-information system of a cognitive type. The first important step is, as usual, obtaining necessary financial means. We intend to use some practical incentives from the study and the number of employees in our information activities as soon as possible.

Electronic Library "Czech Parliament"

The project of an electronic library is also a significant step towards computerization of services of the Parliamentary Library. This library shall contain complete texts of parliamentary prints (i.e. bills, including explanations and decisions), shorthand minutes (i.e. verbatim minutes of all sessions and all voting) and other parliamentary documents from 1861 until now in an electronic form. It would contain tens of thousands of pages of text which could create a good library with hundreds of volumes.

The Library has already taken some preliminary steps in close cooperation with the Department of Information Technology of the Committee of the House of Parliament. On the basis of a proposal by a private firm ESU Praha in June 1995, the library and the Department of Information Technology submitted a proposal for an electronic library called "Czech Parliament" to the Secretary General of the Office of the House of Parliament. The Secretary general of the Office approved the project and appointed a committee of executive officers from the Office under his leadership for final consideration of the proposal before a selection procedure is announced. The committee was to consider the usefulness of the project, set forth its content and scope and try to find some means in the budget for 1996 to start the project (the budget of the Office for 1996 was already set forth at the time of approval of the project). The committee decided to separate conversion of parliamentary texts into an electronic form from production and distribution of a CD-ROM which the project counted on as a carrier of data, and to hold a selection procedure only for the conversion. At the end of 1995, a survey of prices on the

market was conducted which helped us calculate the expected costs. We came to the conclusion that it is possible to carry out activities amounting to 1,000,000 CZK in 1996.

The objectives of the project are:

- To provide access to information on current and past activities of the Czech Parliament to the public, as is customary in democratic countries. At present, all parliamentary documents (prints, shorthand minutes) are stored in written form only in the Parliamentary Library. This situation is in contrast with the fact that the public is increasingly interested in activities of the Parliament. The library, with limited access for the public, may not satisfy the demand through traditional means (providing copies).

- To provide access to current parliamentary documents with regard to the application of modern technology and methods of information work,

- To preserve the "Golden Collection" of the Parliamentary Library for the future in electronic form, because the paper is slowly decomposing and it is not even possible to make copies of some originals; electronic text on a CD-ROM would mean survival of this legacy of the Parliament for another 80 - 100 years.

- To become one of the first parliaments in Central and South-Eastern Europe to create a such electronic library.

The explanation of the project furthermore argues that the investment return from the texts of the electronic library may not be adequately valued in money terms, but that its main purposes are:

(1) To increase the prestige of the Parliament, whose activities are still hidden to the public or interpreted (filtered) through mass media.

(2) To protect against destruction or loss. In case of a possible sudden natural catastrophe, fire, war, and subsequent destruction of the library's collections and archives, the parliamentary documents will be still available for coming generations on a substitute medium in many places, regardless of the original place of their creation and storage (it also applies in case of a destruction of the printed documents as a consequence of natural wear of unavoidable physical and chemical processes).

(3) To increase the speed and convenience of access for the Members of Parliament and Senators to parliamentary documents as a source of knowledge and inspiration of their legislative activities.

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The whole project was planned to be implemented over three years. A decision was made that the so-called "nest-like" method shall be used, i.e. the parliamentary documents will be chronologically converted into an electronic form gradually from key historical periods of our modern history in which there is the greatest interest. In 1996 the following periods of interest were covered by document conversion to electronic format: parliamentary documents from 1989 until now (Federal Assembly, Czech National Council, House of Parliament of the Czech Republic), and from 1968 until 1970, (National Assembly, establishment of the Federal Assembly, establishment of the Czech National Council). In 1997, parliamentary documents from 1945 to 1948 (Legislative Assembly, National Assembly), 1913 (end of the Regional Congress) and 1861 (renewal of activities of the Regional Congress) are being converted into electronic form. The remaining documents shall be converted in 1998. After these activities are finished the texts shall be stored on several CD-ROMs for the purposes of the Parliament of the Czech Republic. Another selection procedure shall be held for production and distribution of the CD-ROMs.

Two private companies won the selection procedure held at the beginning of 1996. They offered the best technical and financial parameters and at the same time carried out the most successful test of conversion of 10,000 pages of text. At present, more then a half of the project has been completed and the work continues. Existing results of the project are available on Internet at the following address - http://www.psp.cz/eknih/. The project has found a great favor both in the domestic and international media which can be also proved by a number of registered entries into the electronic library represented for instance by 1326 entries in May 1998 alone. Internationally compared, this project presents a unique scheme with a deep historical span. For most of democratic parliaments make accessible on Internet only those parliamentary documents of the last two or three terms of office. When the whole project is finished next year, the Parliamentary Library of the Czech Republic, at least its special collection of parliamentary documents, will be open 24 hours a day.

Conclusion

The significance and usefulness of libraries will not be measured by the number of their volumes, number of employees and number of book-loans in the coming information society. These figures will probably drop as is already happening in many libraries which are seriously engaged in trying to computerize and provide electronic information services.

The significance and usefulness of libraries, regardless of their size, will be the greater the faster they change from mere collectors, keepers and lenders of printed documents to the position of an experienced searcher, evaluator and provider of relevant information from all carriers, including electronic carriers. In other words, their significance will be higher the more they are able to apply modern information technologies depending on their human, financial and technical means and to share rich sources, available at present in on-line databases, CD-ROMs and on the Internet, in international cooperation for their users. To return to the tale of the village repairman at the beginning of this paper: it depends on whether librarians will be able to acquire and in the course of time keep their expert advantage with their users, having the technical skills to know which screws need adjusting. Our common task is to change libraries from warehouses (depositories) of books into a rich source or treasury (repository) of information and at the same time serve as an open door leading to it.

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