

Concept of Provision of Scientific and technical Information for Latvia

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CONCEPT OF PROVISION OF SCIENTIFIC AND TECHNICAL INFORMATION FOR LATVIA

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Summary: The Concept has been elaborated by the Association of Academic Libraries and it determines libraries as the main providers of scientific and technical information. Wide application of electronic information technologies has been proposed to improve the efficiency of use of library's own stocks, to develop strategy of virtual library and to create information sources. Particular attention should be paid to the development of on-line services. Implementation of several interrelated projects is going on nowadays.

The purpose and key principles of the concept

Transition processes in politics and economy are going on in Latvia today and changes in education, research and culture are also bound up closely with them. Research libraries as a main provider of scientific, technical, technological information, as a source of knowledge are deeply involved in the common process, that determines both demand and supply of library information services. The national policy of provision of information is strategy of development of research libraries. The level of information services provided by major libraries should conform to today's qualitative and quantitative demands, because it determines the intellectual potential of the country and society to a considerable degree.

**Figure 1. Use of libraries 1986 - 1996, relative changes.
a -- a number of patrons; *b* -- circulation**

Statistics of Latvian Academic Library (LAL) and Scientific Library of Riga Technical University (SLRTU) as well as their services during the last years (see Figure 1) shows yearning of the society for information and knowledge and good prospects for further economic and technological development of the country. Data on SLRTU are related to one university student because the total number of students changes considerably year by year.

The composition of patrons shows the basic areas where the information is necessary: education and training, fundamental and applied researches, development, transfer and adaptation of advanced technologies, production of knowledge-based and science-capacious products. Small and medium enterprises become consumers of information equally with traditional users -- universities, research institutes and research departments of large companies.

To satisfy increasing information demands of the patrons and to organize really user-oriented advanced information services the Concept of Provision of Scientific and Technical Information for Latvia has been elaborated [1]. The basic principles of the Concept were presented in number of conferences and workshops in 1993-1997, including 16th IATUL Conference in 1995 [2]. They were approved by Latvian Academy of Sciences in 1994 and 1997 (see Figure 2). Association of Latvian Academic Libraries has adopted the Concept in full in 1997. The Concept conforms to the general tendencies of evolution of our country towards the information society. As a substantial component of the common national information policy it will be included in the National Information Programme that should be elaborated in 1997 [3].

Figure 2. Course of elaboration of the Concept

The key canon of the concept is the development of information provision and information services, keeping the main traditional principle of any library -- to act as an intermediary in the process of information transmission between the information source and its end-user. The Concept assumes several theses as a basis to realize this principle [4].

To provide information for the abovementioned programmes and purposes libraries should change their traditional style of work according to today's demands. All stages of information ensuring must take place in any research library -- collection, processing, storage, effective search and users supplying with qualitative information in form they need and wherever and whenever they need. Provision of various information services and creation of information sources become a complex task.

An amount of information has increased in line with general development of science and technology, it is impossible at present to acquire all potentially necessary information sources. Therefore, strategy of virtual library should be widely developed in addition to very careful management of acquisition policy and especially it concerns small countries. As a result the traditional complex method of information assimilation -- direct examination of documents, selection of necessary materials and their following learning has become ineffective. The Concept proposes complete separation of both components of information assimilation - information search and its learning, and choice of optimum technologies for each of them.

Electronic information technologies are widely introduced for information supply today. They ensure formerly unachievable possibilities, first of all for information browsing and search. At the same time printed books and journals have some advantages and attractiveness too. It is necessary to specify the role and tasks of each technology in a common information assimilation process and to find optimum distribution of functions between both technologies. Today's optimum is not something eternal, various changes will take place in future too, the optimum balance will be different for various libraries due different needs of patrons. The Concept imagines realization of qualitative information supply exactly by integrated use of both -- printed and electronic technologies.

It is possible to highlight the main applications of electronic technologies and services in libraries for implementation of the abovementioned principles (see Figure 3). All these applications are not separate items, they should be developed as an integrated

information system and as a substantial component of general strategy of development of the library and it is a strict precondition to achieve the raised goals.

Figure 3. Basic applications of electronic information technologies in a library

Basic electronic information services and applications in libraries

Comparatively low real efficiency of use of its collection is one of the basic problems in every library. Information search by means of card catalogues is hampered. The level of user-friendliness of the traditional set of library services is not very high. It is impossible to establish the real use of each book and periodical, therefore to manage and to correct acquisition policy. Statistics shows that sometimes a sizable part of the collection has never been used.

To solve the mentioned problems and to improve use of libraries collections and the level of patrons service, to put in better order acquisition and stock-taking the Concept envisages introduction of electronic data processing in libraries by means of integrated library automation systems.

A set of functions that are performed by various systems is comparatively unified nowadays, data interchange formats are standardized too. The Concept envisages to keep strictly to the open systems principles, therefore possibility to use various systems in libraries, full interoperability of them and import/export of the records should be provided. Library automation systems should be integrated with other information systems and services in the library and with information system of the corresponding university or branch.

Introduction of library automation systems has been already started. Up to 40 libraries have purchased automation systems of different completeness. Not only major research libraries are among them, installation of the systems has been started in regional public libraries too. First of all it concerns acquisition and cataloguing modules. Several integrated library automation systems are introduced nowadays in Latvia. Systems are compatible and conversion of records has been provided.

The software package Alise, that is developed by the private company IT ALISE LTD in cooperation with Library of University of Latvia (LUL), is the most popular one in both research and public libraries [5]. Up to 10 libraries have put their electronic

catalogues in public use too, but only the collection of the Library of the Faculty of Theology of University of Latvia is represented in the electronic catalogue in full [6]. Alise is used also by the National Library of Latvia (NLL) for compilation of the national bibliography, including bibliographic and analytic records on books and periodicals.

The LAL introduces automation system LIBER (France), a number of modules have been put in operation at present (acquisition, cataloguing, OPAC, etc.). To adopt this system for introduction in Latvia specific Latvian diacritical characters were included in the system and it allows to compile bibliographic records in Latvian too. User's dialog also has been translated into Latvian. The system is connected with a desk top publishing system for compilation and publishing of bibliographic indexes. Special module of the system (CODEX) is used for cataloguing of rare books and manuscripts.

The NLL has devoted several years to the introduction of VTLS (USA). The system is not put in public operation yet, only cataloguing has been started at present.

To develop virtual library strategy, to provide information that is not collected in stocks, two tasks should be performed: provision of global information search and delivery of the necessary information for its learning and they are linked together. The Concept envisages to use widely the electronic technologies to work out both problems.

Computer search provides information on all available documents. The development of document delivery service became really possible only after spreading bibliographic data bases. On the other hand, the best method of information search is senseless without a possibility to receive full texts of documents. Only implementation of integrated service - computer search of information and document delivery service will ensure worldwide scientific and technical information supply. Development of CD-ROM service, acquisition of data bases and installation of workstations, connection of libraries to Internet and conclusion of agreements with international on-line information and data base systems are envisaged by the Concept as essential tasks for any research library.

Widespread introduction of CD-ROM service has taken place in major libraries and other information institutions [6]. Up to 200 titles of CD-ROM data bases are publicly available in Latvia today, their subjects (all fields of science and technology, patent, company and product information, catalogues of publishers and national bibliographies) correspond to the general themes of the respective library. According to the Concept, more than 50% of total number of CDs contain bibliographic information, 30% of total number are factographic and the rest -- full text CDs.

Latvian Academic and Research Network LATNET has been developed to provide global networking, to interconnect educational and research institutions, libraries and government departments and networking is spread to a number of regions (see Figure 4). LATNET provides a full set of Internet services and it is Latvia's national information highway [7]. According to statistics from Reseaux IP Europeans (RIPE) more than 6,000 computers and LANs are connected to the Internet, while the number

of E-mail addresses has reached 20,000. The share of academic clients is approximately 75%.

Figure 4. LATNET international and local links

Major libraries are connected to LATNET by means of leased lines or 2 Mbps radio links (see Figure 5) and thus they can provide on-line information services to their patrons including consulting and information search made to order. The main task for further development is spreading of on-line services, especially outside Riga to the regions of the country according to the basic principles of development of the information society. Progress in telecommunications services, particularly creation of the National fiber-optic cable network can serve as a real technological basis for development of networking too, including connections with regional libraries.

Figure 5. Connectivity of major libraries to LATNET LLAM -- Library of Latvian Academy of Medicine

Several Latvian information institutions have concluded subscription agreements on use of on-line information systems. Data base systems STN International, Dialog, DataStar, Genius, data bases of National Medical Library of USA, information network AGLINET et al. are available in Latvia today. This kind of on-line service should become the main one for libraries in future instead of simple browsing in generally available Internet environment.

Electronic information technologies also help to solve the second problem -- provision of selected documents. The Concept envisages development of different ways of document delivery to patrons -- by mail or fax, via information networks.

Two years experience of the LAL in use of the document delivery service shows necessity of this service, up to 250 requests per month are received from patrons of LAL. The share of completed requests is up to excellent 98%. Specialists from up to 50 various institutions have used this service. The main part of them are researchers of academic institutions, but employees of 12 state and private enterprises have also shown their interest in the latest technical and technological information.

In addition to service provided by The British Library Document Supply Center Boston Spa, to make the delivery period shorter and due to support of federal government of North-Rhine Westphalia (Germany) the LAL was connected to on-line document delivery system JASON NRW in 1996. The system ensures document delivery via Internet and requests are completed in several days. The price for this service in 1997-1998 is substantially reduced thanks to financial support of Open Society Institute. Some other libraries, e.g., Research Medical Library (RML), Fundamental Library of the Latvia University of Agriculture (FLLUA) also start to develop document delivery service at present.

A distributed Baltic document delivery system would be developed in future. Subscription for the set of necessary periodicals should be distributed among major research libraries of all three countries, and transmission of scanned articles via Internet should be organized to implement such a project.

The creation of various information sources is a substantial part of information services, it is necessary to ensure full information processing cycle for qualitative information support. Due to small information market in small countries preparation and updating of information sources is unprofitable business, obviously it should be subsidized to a great extent by the state. According to the tendency of distributed information processing large information centers have finished their existence, and libraries become one of the basic information institutions in this sphere. Therefore, libraries should take an active part in creation of various electronic information sources -- WWW pages, data bases, catalogues, directories, etc., especially those containing bibliographic, reference and other metainformation according to general subjects and regional profile of the library as well electronic textbooks for distance learning [6]. It will become a basis for development of resources of the electronic library in the future.

Machine-readable records of the Latvian national bibliography have been available on diskettes since 1997. Creation of Baltic union national bibliography on CD would be realized by national libraries of all Baltic States.

A number of bibliographic data bases and directories have been installed on the server of LAL. They have been integrated with electronic catalogues, export of records is taking place from catalogue of the LAL and other libraries too. Patent and Technology Library (PTL) maintains Directory of Standards, libraries of several universities are creating catalogues of publications of their employees. Private

company LURSOFT has started to create several full text data bases of Latvian newspapers.

Creation of electronic copies of rare editions and manuscripts is necessary to guarantee preservation of originals, that form part of the national culture heritage, as well as to provide general availability to information at the same time. Full image data base (copies of J. Chr. Brotze "*Sammlung verschiedener Liefländischer Monumente...*"), that will be linked with the library automation system LIBER, is created in the LAL.

Inclusion of information on Latvia in worldwide information systems is another important task and libraries are also taking part in this process. FLLUA is the national center of United Nations agricultural data base system AGRIS/CARIS, LAL represents Latvia in European Association for Grey Literature Exploitation EAGLE. Records on results of investigations of Latvian researchers in multisubject data base SIGLE provide one of the most real possibilities for any researcher to establish wide cooperation with Western colleagues and to obtain investments for further investigations and their applications.

According to the principles of development of the information society the Concept envisages that information services should be brought nearer to the places where end-users of information are living and working. It is especially substantial for development of peripheral regions of the country, for regional universities in Daugavpils, Liepaja, Jelgava, Valmiera, for development of small and medium businesses in any locality. Therefore, particular attention should be paid to the development of information provision on-line and to creation of on-line information sources. The first steps are being done.

WWW Sites of the LAL [8], the LUL [9] and the Scientific Library of Riga Technical University (SLRTU) [10] contain detailed information on history and development of these libraries, on their collections and services, links to on-line catalogues and data bases. WWW Site of the Association of Academic Libraries [11] contains information on collections of participating libraries and services that are provided by them. Taking into account proceeding WWW boom in Latvia, creation of WWW pages of all major libraries seems to be a question of a short time.

On-line catalogues of the LUL and the LAL are widely used at present. The next step will be the introduction of on-line request and reservation services for patrons and these services should be further spread to other libraries.

The set of on-line services provided by the LAL is the most developed one in Latvia at present (see Figure 6). A number of bibliographic and reference on-line data bases are publicly available. Centralized on-line CD-ROM service is provided by the library to the researchers of Latvia directly to their workplaces in universities and scientific institutions. Patrons of the library can send their requests for interlibrary loan and document delivery by E-mail.

Figure 6. Latvian Academic Library: the set of on-line services

Remote access points in academic institutions are organized as a new kind of information service that provides universal access to on-line resources of the library, it includes browsing and search of information, delivery of requests to the library and electronic document delivery to patrons. The first points have been installed in the University of Latvia (Computer Sciences Department) and in the Riga Technical University (Faculty of Chemical Technology and Faculty of Radioengineering and Telecommunications).

Action plan and pilot projects

Several interrelated projects are implemented nowadays according to the Concept to create advanced technological infrastructure in libraries and to enable development of full spectrum of electronic information services . Creation of the National Integrated Library Information Network LATLIBNET (see Figure 7) in LATNET environment in accordance with the open systems ideology is the main common goal of the projects. Due to the importance of the system for development of the country as a whole, status of the National Information System should be conferred to the network.

A number of advanced principles should be assumed as a basis of the LATLIBNET:

- of unrestricted number of various libraries and other information institutions;
- of all information services, applications and systems in libraries including desk top publishing, accounting, etc.;
- with corresponding university information system including registers of lecturers, students and study programmes, etc.
- of various automation systems including specific systems developed by The British Council, US Information Center, Eurofaculty, etc., exchange of bibliographic records including centralized distribution of the national bibliography, possibility to use several special classification systems and thesaurus, as MeSH, AGROVOC, International Patent Classification of WIPO, etc.;

Figure 7. Creation of the LATLIBNET, the pilot projects

Achievement of the abovementioned goals in eight major libraries will be the subject of realization of the first stage of the LATLIBNET in 1997-1999. Installation of hardware and software, creation of LANs and connection of libraries to LATNET should be realized in the libraries. Implementation of the first stage will be possible due to matching financing of the National Investment Programme and the grant provided by Andrew W. Mellon Foundation.

The project envisages creation of an on-line national union catalogue too. It is possible to use the most advanced technologies nowadays and to develop distributed union catalogue as an information browser in LATNET/Internet environment that is based on on-line catalogues of all participating libraries. Such an approach will provide a possibility to create Baltic union catalogue as the next real step.

The Public Library Network Programme is developed by the Ministry of Culture in cooperation with IT ALISE LTD. Library automation software package Alise is chosen as an unified system for public library automation in Latvia. The package has been specifically adapted to cover public library needs. The programme includes also development of electronic information services (CD-ROM, on-line, etc.), creation of electronic information sources, participation in making analytic records for the national bibliography. Implementation of this programme means spreading of information services to the peripheral regions of the country.

A project Unified Information Network of Latvian Public Libraries is implemented in 1996-1997 according to the Programme. The project is financed by The Soros Foundation Latvia, Open Society Institute (Budapest) and the local authorities. Seventeen public libraries of several types and various regions have been selected taking into account a number of criteria. As a result of this pilot project technological infrastructure and preconditions for automation of acquisition and cataloguing processes, for public access to the electronic catalogue, for creation and use of analytic records and for electronic information services will be provided.

Several projects are being implemented in 1997 to spread document delivery service. Due to grants of Open Society Institute NLL and FLLUA had the possibility to start this service, but LAL to develop further this advanced and very substantial for Latvia service.

Implementation of all projects must be directed to attainment of optimum practical results first of all. Successes achieved during previous years should be used in full. Although mutual coordination of projects is taking place, it should be made better to achieve these goals. It is necessary to raise further the leading part of professional unions of libraries and especially that of the Association of Latvian Academic Libraries.

A number of related problems hampers the implementation of the projects as well as the whole Concept . Several conflicting legislation problems should be solved, e.g., protection of intellectual property of electronic publications, dissemination of knowledge vs. protection of rights holders, information as a commodity vs. favorable conditions for access to non-profit organizations as schools, universities, libraries.

High price of information is the essential limiting factor for wide use of international electronic information and especially it concerns on-line services. Information market is poorly developed at present and purchasing capacity of the main users of scientific and technical information is low. The use of on-line international information sources is much more restricted in comparison with CD-ROMs. Therefore price policy of STN International, ISI, Lange & Springer and some other information providers (discounts for Central and Eastern European Countries), participation of various foundations (Soros Foundation first of all) in financing of these services is very essential for further increasing of their use. The Concept envisages an establishment of considerable discounts for services that are oriented to one specific end-user and the main part of the price must be paid from the library budget.

Further successful progress of electronic services will depend to a large extent on the strategy of development of the academic network LATNET and the Government Data Communications Network too. High capacity interconnections by means of the fiber-optic lines between the main universities in Riga, spreading networks to local centres, determination of libraries to be connected to the network by leased lines and radio links, participation via dial-up connection - all these factors have an influence on the development of information services.

To improve the skills of research library staff and end-users as well is necessary for successful implementation of electronic technologies. It concerns especially to efficient use of on-line information systems and services, choice of optimum strategies for information browsing and search, rational traffic via network, receiving necessary information in the most useful form. Therefore various training sessions must be organized for librarians and patrons regularly. Much more attention must be paid to the assimilation of electronic information services in Bachelors' and Masters' programmes at the Department of Librarianship of the University of Latvia.

To expand the use of electronic technologies libraries should intensify additional promotion activities: presentations of information technologies and companies, seminars on new information products, etc.

Radical changes are taking place in Latvia, introduction of electronic information services and applications is complicated by ongoing transition to a market economy, shortage of local investments, a certain backwardness in technology and sometimes overly conservative approach by the authorities. But it is an advantage for our

country, and it depends to a great extent on information specialists how it will be exploited. It is possible to take the experience of Western countries to accelerate the process and to develop information systems using the most advanced technologies, sometimes even more advanced than those are in everyday use in European Union Member States. There are high skilled information specialists in our country to implement the Concept.

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