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The basic principles for the development of a computerized information system in the Central Technical Library (strategic appraisal)

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Abstract

Today, when we talk about information technology issues in library and information services, it is difficult to outline with great precision optimal developmental objectives for these services. The problem with which information providers using sophisticated information technology are confronted is how to plan for the efficient management of information and library services in the fast-growing and constantly changing field of electronic information, in order to meet the increasing demand from the present business and industrial sector for library services.

1. Computerized support and activities of the Central Technical Library as a production process

The activities of the Central Technical Library and its functions need to be considered from three points of view: conceptual, organizational, and technological. The present organization of work with the available resources in the Central Technical Library, allows for a gradual introduction and application of three basic utilizations of modern information technology. These are computerized data processing, telecommunications, and electronic publishing (desk-top publishing). They pave the way to almost unlimited promotional prospects of library activities and to the following functions and services: library function, acquisition and lending services, referral services, information services, training services, liaison (networking) services, and, finally, publishing services.

The traditional and standard activities of the Central Technical Library such as acquisition, documentation and information services, referral, publishing, information processing, co-ordination and research, within the specialized information system for science and technology (Yugoslav STI system) can
Strategic appraisal in CTK undoubtedly be greatly enhanced by introducing sophisticated information technology.

The activities of the Central Technical Library are very complex and structured. Consequently, the development of the computerized information system is a very demanding and responsible task. Therefore, it is not possible to envisage, clearly and in every detail, an exact developmental model that the library should follow. On the contrary, we believe that a project management approach should be implemented within the library research and development functions in order to adapt to the changes in the work processes. That will necessarily result in the need for appropriate expertise on the part of library staff. With the implementation of the computerized information system, functions and operations evolve that need to be introduced into the system, replacing old methods of work which may no longer be appropriate.

In order to completely transform the present services of the Central Technical Library, which is part of the Slovenian (national) library system and also of the Yugoslav scientific and technical information (STI) system, into a totally computerized information system for technology and natural sciences, a different method of data collection is needed from the one we have used so far. This requires an entirely new conceptual attitude towards library functions. The function of the Central Technical Library is becoming linked more and more with scientific, economic, industrial and business areas. All the processes carried out in the library can be interpreted and treated as production processes, in which the transformation of information and documents takes place to obtain the appropriate end products required by the users.

In the function of information technologies and, in the function of electronic data processing in particular, three major technological production processes occur. These are (i) traditional library processes, based on primary documents, and their availability through various electronic media, (ii) information processes, input and output functions and end-products, and (iii) communication processes which connect participating members within the information network(s).

2. The Library production process

Library and information processes have all the elements of the production process. They focus on typical, standard library operations such as purchasing, invoice control, cataloguing, and document storage and retrieval. Information about the primary documents, and provision of primary documents, are considered as library input functions. The production process within information processing is carried out according to international, and national, library standards supported by appropriate software availability.

The results, or end products, of the library production processes are library services proper, that is document provision and delivery. The kinds of services depend on the kinds of documents and on the profile of the information user. In traditional document processing, several information processes are already applied. Collection of data about the documents is a part of the traditional
process in the library which will be computerized in future, and thereby a database will be constructed as the finished product. These processes were not so clearly evident until recently when computers began to be used, because of the unstructured nature of the information. Information collected from various databases will have to be carefully categorized and structured, and carefully processed, stored, and disseminated. We can assume that unstructured data will be processed into the final end-product, the database, through the appropriate computerized processing.

3. The information production process

Another important field in the library production process is represented by its information processes (referral, information, documentation, and communication services) covering the collection, processing, storage, and dissemination of data. Comparing the scope of activities within the various stages in the information production process in the Central Technical Library, information processes are increasing in importance and scope for their users and will continue to do so. By utilizing the available resources through the efficient use of information technology, the information services will increase their effectiveness. The technology of information processing in the Central Technical Library is used to support library input functions. The technological process requires the input of data, to the input of information about the material (documents), the processing of the data, and database construction and information delivery. Input structures refer to information about the material in the library and entering the data into the computer. Data is stored on various information media such as tapes, diskettes, CD-ROMs, and videodisks. Information processing encompasses data collection and database construction: data collection is carried out via the terminals, according to standardized methods and format. Database construction is carried out according to the needs of the users. In future, database co-ordination and supply will be co-ordinated with other information providers.

Information storage and retrieval are specific and important tasks carried out by a system of descriptors. Another important element that needs consideration in the future is data protection. Information retrieval within the library context is concerned with collation and analysis of information requests, information collection and delivery, and costs. In future, emphasis should be put on the supply of information and on marketing.

4. Expected output activities

These include hard copy delivery on demand to the users by the library staff responsible for operating the services, information delivery from the database to institutions and companies, information availability on various electronic media, and direct output online at the terminal for individual users and for institutions.
5. Strategies for development

In its function of developing an overall computerized information service, the Central Technical Library will develop organizationally into an information and referral centre, and a library with interlending services. Information-conscious users will require prompt information provision and delivery of primary documents. The primary documents, that are becoming increasingly expensive to buy, will need a careful purchasing strategy which is cost-effective.

The Central Technical Library as a national node in the network of the Yugoslav Scientific and Technical Information (STI) system has the following responsibilities for 1989:

1. operations and activities linked with its role as a node in the network of the STI system;
2. local input of data and information relevant to the Yugoslav STI system;
3. utilization of information services delivered by the STI system;
4. utilization of information services delivered by the Computer Centre of the University of Maribor;
5. utilization of services and collaboration with the Yugoslav public information network.

6. Operational tasks

The following are the main operational tasks involved in the development programme:

1. the preparation of an inventory of those libraries, information services, and other information units (archives, museums, publishers) that are interested in the creation of useful databases;
2. establishing an adequate set-up of qualified and experienced staff in the Central Technical Library to fulfil the needs of communication processes, information services, and developmental library programmes;
3. the organization of local information input and processing services relevant to the Yugoslav STI system and transfer to the host system within the network;
4. the introduction of data-protection and security according to the proceedings prescribed by the Computer Centre of the University of Maribor.

Considering the developmental objectives of the Central Technical Library, the information sources stored in the library and the links within the environment and with other countries, the most important strategic step will be the development of the module EUROPE 92 which not only fosters the promotion and efficiency of specific fields such as standards, but will greatly influence other library services as well. Therefore, all the operational processes connected with that module will need to be defined in advance.
7. The strategy for the development of the total information system

In forecasting the development of the information system in the Central Technical Library, the major points for consideration can be summarized as follows.

- The efficiency of the present information system is directly linked with the organizational structures of the functional areas of the library.
- Constant changes and adaptations of the available information technology are required and are being introduced in order to fulfil the library's developmental requirements. The Central Technical Library has to develop into a referral centre and become an important link in an information-conscious environment. The library has to develop in accordance with modern trends in the field of library and information sciences in Slovenia, for example, by the creation of an online union catalogue of serials and also an electronic interlending system. The Library's objective is to become a major referral centre, linking other information services in companies, universities, R&D and training organizations. All this will undoubtedly contribute to the creation of effective databases as end-products.
- Another field of activity of the Library is its business and management function. This also requires computerized support. The software for this has yet to be developed. We are aware that all the library services should be developed for the benefit of the users who expect prompt, interdisciplinary answers to their queries.

8. Objectives

The developmental objectives of the Central Technical Library focus on the following issues.

(1) Establishing a computerized information system that will be able to offer updated and exact information and documents to its users, whether they require standard library services or end-products online. The requirements of the users regarding the information products need to be identified.

(2) In order to operate the information system and make it effective, an adequate organization is required so that it will be able to support computerized business and system (i.e. management) functions. This will enhance the library functions, referral capabilities, and overall development prospects of the Central Technical Library in line with the growth of the Yugoslav STI system. Computerized support will enhance internal library organization and promote activities of data collecting, processing, and dissemination, according to the user's needs.

(3) The setting up of the Central Technical Library as the specialized system for technical and natural sciences in accordance with the requirements of the users in those fields, and adequate programme support for library information services in Slovenia and in Yugoslavia (STI system) until the year 2000 are our major responsibilities. There is
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particular emphasis on developing interdisciplinary fields of activities, the standards library, and information centres for civil engineering, ecology, and energy.

(4) The development of referral functions relating to information sources at home and abroad with appropriate software will be a key ingredient of our service.

(5) Another important task is the training of all the participants in the development of such an information system. Programmes for developing an information culture and training in information awareness are needed for all categories of staff, managerial staff, information workers, and end-users.

(6) Links with world-wide information systems databases within online networks, and online accessing, are vital for our users and should be promoted.

(7) Construction of relevant databases that serve specific users and their requirements, considering the quality of services and implementing appropriate marketing strategies, are likely to be contained in our programmes.

(8) Establishing communication and collaboration among active participants within the network and between database users and producers alike.

(9) Development of an awareness of the role of modern communication systems in an information culture.

9. Conclusion

In order to attain the objectives outlined in Section 8, we intend to develop special projects to encourage greater use of information technology. Through increasing the number of participants in our development projects we also hope to make use of our own experienced people and our resources of knowledge and expertise. By applying practical results that have been developed elsewhere in the country, in our research institutes, it is possible to extrapolate the results to achieve our specific objectives. We also hope to be able to collaborate with experts in other countries that have already successfully passed this stage in the online information field.

The development of information systems like that of the Central Technical Library may stimulate the growth of other information systems in other areas and communities besides the Yugoslav STI system. The possibility of analyzing what has already been done in other countries should provide us with international experience (know how) and promote our information work so that we may take our place in the world online information community.

References


