Organization of Scientific and Technical Information in Hungary

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The organization of the national information-handling activity in Hungary is examined, outlining the coordinating role of the Central Technical Library and Documentation Center.

It is difficult for Americans to comprehend the special reasons which determined the development of scientific and technical information services in the smaller European countries. Each country has its own specific resources and problems; its scientific life and the related supporting activities, such as information, are greatly affected by these factors.

The following, possibly apocryphal, anecdote illustrates the special case of Hungary.

During World War II, four scientists sat around a table discussing an important facet of the Manhattan Project. After a while, one of them exclaimed suddenly: "Why do we bother speaking English? After all, we are all Hungarians." They were indeed; their names were von Neuman, Wigner, Szilard, and Teller. It would be difficult to find four scientists from any country—except perhaps from the United States itself—who made equally great contributions to the success of the Project as these four individuals.

The prominence of these men and the several others lead physicists to the whimsical conclusion that they were not Hungarians but Martians.[1]

The contributions of Hungarians to the cultural life of this country have been noted by Laura Fermi (widow of Enrico Fermi) in her book on the new breed of immigrants to this country during the third and fourth decade of this century.[2] She wrote a whole section starting on page 52 on The Mystery of Hungarian Talent: "One question is often asked in this country: Hungary is a tiny country, with a population in 1930 of only 8,683,700, and yet she sent to America an amazing number of outstanding men in all intellectual fields, scientific, scholarly, literary, and artistic. How did she do it?" The achievements of the immigrants are further reviewed in another chapter (pp 111–16).

Hungarian scientists are working in many Western European countries, as I could observe from personal experience. For a year I was involved in the development of the International Cancer Research Data Bank, having been chosen as the European representative of the project probably because I was educated in Germany and France and also know other languages. Perhaps not so suprisingly, I found that English was a sufficient medium to communicate with researchers throughout Europe; in addition, in nearly all of the research institutes and organizations that I visited, in France, Switzerland, Germany, Belgium, and England, I found somebody who spoke Hungarian.

It is indeed remarkable how this small country of about 10 million inhabitants, surrounded by people who speak completely unrelated languages, produced so many individuals prominent in the arts and sciences. The many historical, political, and economical factors which brought this about cannot be considered in the available space, but some of the most important ones should be pointed out.

After having come to terms with the Austrians in 1867, Hungary enjoyed a period of relative prosperity. Although it had many problems with its nationalities, the Austro-Hungarian monarchy made economic sense in spite of its political shortcomings: it represented an entity comprising about 50 million people who produced enough food to feed its people, and its industrial base in the western part of the realm provided manufactured goods for them. While competing with Austria within the dual monarchy, the Hungarians were exposed to the German culture, and through the German language they became part of the German technical community.

Having been on the losing side in two world wars resulted in radical political changes. Between the wars, the spirit of the population was inflamed by the loss of a large portion of its national territory. The country became too small to support all of its intellectuals, and, following the example of the peasants who left the country in droves before the First World War in search of land and opportunities abroad, many of the bright young men emigrated. Political pressures accelerated this process.

The more recent post-war period brought on many changes. The country, now part of the Soviet Bloc, became isolated from its former Western partners. The well-known upheaval of 1956 resulted in another sudden large migration of educated people. Technical and scientific ties with the West suffered but were reestablished by the gradual detente during the recent years.

Americans, accustomed to the quadrennial cycle of presidential elections and the very slow change of the 200-year-old constitution by amendments, cannot fully conceive the effect of these upheavals caused by shifting the national boundaries and changing the type of government and the prevailing political philosophy. These experiences affected strongly the development of the country's technical information systems; however, this is of interest primarily to historians of science. Hungarian writers covered well the historical evolution of their technical and scientific information system.[3]

During the third quarter of this century, the formerly agricultural country became strongly industrialized. A strong factor in this process was the proliferation of scientific and technical research institutes which became the foremost customers of information. By 1968 there were more than a thousand research institutes, employing over 55,000 persons. At present, R&D activities approach 1% of the gross national product; this compares favorably with the advanced industrialized countries.

The official government policy is not to duplicate the development work carried out elsewhere and not to compete with the superior equipment of the advanced countries. It has been realized that the native activities can obtain from abroad all the new technological information needed by an industry in full development. In certain areas, such as manufacture of textiles, pharmaceuticals, and even heavy industry (articulated autobuses built in Hungary may be found in many parts of the world), the country's industry gained an excellent reputation. However, as far as the overall research and development activity is concerned, the Science Policy Directives of the ruling party emphasize the potential advantages of international cooperation, by keeping track of the progress throughout the world and limiting the local R&D studies

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primarily to the adaptation of new processes and techniques to the requirements of the country.[4]

According to this directive, research and development activity is restricted to specifically approved areas; on the other hand, every effort is made to provide up-to-date information to the country's scientists and engineers. This requires a specialized information-gathering and distributing system which takes advantage of broad, discipline-oriented agencies, wherever they might be.

During the last quarter century, the technical library system of the country received strong support, and several document centers were established; the economic information activity was not neglected either. It has been officially recognized that, even in a small country, technical progress requires understanding of the information process.[5]

Several technical ministries were involved at one time or other in the supervision of the technical documentation and information. After repeated reorganizations, the present Central Technical Library and Documentation Center (known as OMKDK by its Hungarian initials) has been designated to serve as the central technical information-handling agency for the country. The Center was originally a technical library when it was founded in 1883; it inherited several architectural and engineering book collections in 1949; finally, when it was reorganized in 1962 its scope was broadened. Its assignments now include technical information-handling activities. It became one of the largest and perhaps the most important technical information gathering and distributing agency of the country. The OMKDK is supervised by the National Commission for Technological Development. Its role in providing up-to-date information is enhanced by the fact that since 1968 the role of the centralized industrial planning board gradually has been deemphasized, making the individual industrial plants more dependent on technical and management information sources. Thus, in addition to the conventional scope of the technical literature, marketing problems, new trends in the technical approach, and information in the basic sciences considered of potential interest for the national economy of the country are also covered.

In principle, the basic sciences are under the jurisdiction of the Hungarian Academy of Sciences, but the Academy's activity involves primarily supervision of its own library and of its research institutes. In addition, five technical ministries maintain special libraries in their fields of interest, (just like our Library of Agriculture and National Library of Medicine, which are sponsored by the Department of Agriculture and the Department of Health, Education and Welfare, respectively).

These agencies and OMKDK created a coordinated network to eliminate unnecessary duplication in the procurement of foreign journals and to assure the monitoring of technical literature. Users of the system include the staff of manufacturing plants and individual technical men.

During the years OMKDK has built up its collection to more than 300,000 books and 120,000 bound volumes of periodicals. It subscribes to about 5000 journals and serves about 1200 registered users. In addition to its conventional library circulation service, the OMKDK issues critically evaluated reviews and prepares state-of-the-art reports in about 1800 subject fields of interest to its users, thus bringing recent developments outside of the country to the attention of the engineers and managers at the industrial plants. It also offers a retrospective search service and publishes KWIC and KWOC types indexes. Acquisition of difficultly accessible reports is facilitated by concluding exchange arrangements with about 900 foreign institutes.

In addition to its about 400 employees, OMKDK uses about 2500 external part-time experts who serve as reviewers, editors, and translators. The translation department provides the Hungarian version of more than 350,000 pages of technical articles, amounting to more than one-half of the technical and scientific translations in the country; it also maintains a central registry of all translations. In this field, its service is better than that available in the United States. The parallel registry of "translations in progress" helps to eliminate proposed duplicate translations commissioned by another interested party or by another agency.

The Center is housed in a former residence of a noble family. The elegant manor house, declared a national monument, provides a pleasant working environment but it creates problems for the management. As have all libraries and information services, OMKDK outgrew its allocated space, but it is forbidden to make extensive alterations or to remodel the building because every structural change must be approved by the National Commission on Art and Architecture which is interested in the preservation of art and is not necessarily concerned with the operational efficiency of the Center. As there is no space available for further expansion at the headquarters, additional facilities must be constructed elsewhere, with resulting inconvenience. According to the present plans, the library and the related documentation services will remain at the present location in the center of the city; the proposed computer center and other technical services will be located in a new building, to be erected at the outskirts.

Because of the small size of the country and the number of engineers and technicians, the market is not sufficiently large to support the publications; therefore, they must be subsidized. As mentioned before, Hungary had to decide which areas of science and technology are of interest for its national economy; information activities in these areas are subscribed in other fields, and the users must rely on services obtained from abroad. The isolated nature of the national language makes it difficult to "recirculate" the output of the information system outside of the country to secondary users; on the other hand, a large percentage of the scientifically trained people is at least bilingual, and thus is able to read articles written in some of the major technical languages.

Organization of the national information system reflects these considerations. The system serves governmental decision makers who are aided primarily by the statistical and financial subsystems. The scientists and engineers use another "professional" compartment which includes scientific, technical, and economic information.

The Ministry of Finance (Treasury Department) is in charge of the financial information system; the Central Statistical Office supervises the statistical subsystem. The professional information system has a more complex administrative structure. The special libraries are under the jurisdiction of the Ministry of Culture (Education) while the Office of Technical Development and the specialized technical ministries (such as the Ministry of Building and Urban Development, of Light Industry, of Metallurgy and Engineering Industry, of Heavy Industries, etc.) are jointly responsible for areas within their competence.

The system maintains internal market research organizations for the foreign and the internal trade; OMKDK acts as the coordinating agency for the specialized information centers sponsored by certain ministries. International cooperation is encouraged; for example, the Ministry of Agriculture and Food maintains an information activity, called Agroinform, which collaborates closely with the AGRIS system of the Food and Agricultural Organization in Rome. Some of the information and documentation centers do not function as a separate agency but as an administrative extension of the research division of the ministry.

Pure research in Hungary, as in the socialist countries in general, is the responsibility of the National Academy of Sciences. The Academy operates certain research institutes, some of which parallel those established at the universities, and carries out discipline-oriented information activities.

It might be of interest to compare the organizational structure of the scientific and technical information services in the United States, Soviet Union, and Hungary. In this country the scientific and professional societies assume responsibility to gather and distribute the information within their disciplines. They publish the prestigious primary journals and, in addition to quality, they usually dominate the field quantitatively. The American Institute of Physics, a federation of societies covering physics and astronomy, publishes about one-third of the world's physics literature; the American Chemical Society has a similar leading position in its area; biologists and engineers also turn to journals published by their professional organization. The same thing is true for the second-level activity, the publication of abstract journals and administration of computer-based information services. Most major agencies are supported or sponsored by a scientific or technical society or a federation of several societies. Government agencies play a role mostly in mission-oriented activities, such as those supported by ERDA or NASA.

On the other hand, the Soviet system, represented by the All-Union Institute for Scientific and Technical Information (VINITI), is monolithic: it is an all-encompassing organization which publishes the well-known abstract journal (*Referativnyi Zhurnal*) which covers most fields of science and technology (with the exception of a few areas, such as clinical medicine, agriculture, and architecture), reviews the state-of-the-art, and supplies translations of foreign articles.

Hungary appears to have chosen an approach between those of the U.S. and the Soviet Union. It is more decentralized than the latter, but OMKDK does provide leadership as a "primus inter pares" coordinator among the information-handling agencies of the country. Being part of the socialist bloc, it is quite natural that the nongovernmental societies do not play an important role.

Hungary's solution to its information problem appears to be due to the country's special position; its geographical location seems to predestine it to serve as a bridge between the West and the East. It is quite natural that Hungary does not try to compete with the information "wholesalers" of the major countries but makes good use of them in reference material, concentrating its information activities in areas of special interest to the industrial efforts of the country.

The level of industrial development is another factor which affects the design of a national information system. Hungary is at an intermediate level—considerably ahead of the so-called "emerging" countries but behind the major industrial ones. Although, as it has been pointed out, it has perhaps more than its share of brilliant, innovative people, only about 3.3% of the population completed college and 9.4% graduated from high school.

The basis of the present structure of the technical information system was outlined in a resolution drafted in 1966. It assigns to the ministries and other specialized country-wide agencies their area of responsibility. These agencies are instructed to inform the technical community of the country about progress in their own institutes and plants.

In its capacity as the central information-handling agency of the country, OMKDK also coordinates contact with international organizations. It supervises the Hungarian liaison with IUPAC, assigned to the Chair of Analytical Chemistry of the Budapest Technical University; it provides input into INIS, the International Nuclear Information System and makes use of the services supplied by the International Center for Scientific and Technical Information of the Council for Economic Mutual Assistance in Moscow.

The dual nature of OMKDK—a well-endowed technical library with a large circulation department and a document center staffed with specialists—is responsible for its complex financial support. Expenses related to the library function are covered by direct state subsidy; however, the information gathering costs incurred are passed on to the users. The goal of the management is to make the services self-supporting. This presents problems because for a long time all information services have been provided free of charge and the demand for certain types of services is too low to be competitive.

The special services include preparation of state-of-the-art reviews, a card service covering about 1400 preselected subjects, and an SDI service. The operations are carried out through special departments, called directorates, which are charged with the collection of the information sources, abstracting, indexing, SDI translating functions, and coordinating activities. There is a special branch for audiovisual methods, technical films, marketing, reprography, and financial matters. In view of close technical collaboration, a special group has been established to cover the French technical literature.

The Center fulfills also other functions. As it needs multilingual subject experts, skilled in information handling, OMKDK assumed responsibility for language teaching and for education in the field of information science. At present only a few isolated courses are offered in this field at Hungarian universities; promising young people are trained at in-house OMKDK courses and some of them are sent to foreign universities for advanced study.

An information journal is published in Hungarian for the benefit of the about 32,000 scientists and engineers in the country, but specialized reviews are issued in Russian, English, German, and French to acquaint foreign readers with the results of Hungarian research. In addition to the publicly available publications, special reports not available to the general public usually are prepared at the request of government ministries.

At present OMKDK is at cross-roads.[6] Like similar agencies elsewhere, it fights inflation which eats into its budget allocated for the subscription of magazines and purchase of books. It outgrew its present computer facilities, consisting of French and Soviet machines which were not completely compatible with each other and taxed the resourcefulness of the programmers. The management expects to obtain modern Western machines in the near future.

As this cursory survey indicates, the Hungarian approach to technical information represents a specific solution to satisfy the information needs of the country by taking advantage of services available elsewhere and concentrating resources on areas of national interest.

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