"APPLICATIONS OF THE INFORMATION SYSTEM IN ECONOMY" A SYMPOSIUM

In the course of the present technical and scientific revolution, a process prevailing on a worldwide scale, we are witnessing, on the one hand, the introduction of electronic computers in scientific, economic, technical, industrial, business and financial activities, and, on the other, the increasing weight information is getting in every social activity. These facts lead nowadays to as far as possible a systematic organization of the collection, transmission and processing of data which will constitute the basis of scientific decision-making. This organization should be based on the rational utilization of all recent results obtained in the field of automatics.

As a result of the very large number of data produced by economic processes and which must be collected, a vast area of applicability is attached to informatics. The utilization efficiency of information systems leads to the substantial improvement of the management of organizations, economic branches of economy as a whole, to the improvement of the activities in the administrative body, a. s. o.

The above subject matter was presented for consideration on the occasion of the symposium "Applications of the Information System in Economy", held in Bucharest on October 15 to 21, 1968. The proceedings of this symposium, organized by the Association of Scientists in the Socialist Republic of Romania, took place in a number of plenary sessions, as well as in the following special sections:

Section I: "Operations research in economy and economic processes algorithmation."
Section II: "Application of the information system in planning."
Section III: "Application of the information system in the scientific management of enterprises."
Section IV: "Application of the information system in the banking and financial system, in the supply and sales system, a.s.o."
Section V: "Organizational and structural problems of data processing systems."

Moreover, three round-table discussions were organized during the Symposium, on the following subjects:

1 — The utilization efficiency of computers in administering large organizations.
2 — Present problems of operations research in economy.
3 — Organizational and structural problems of data processing systems.

The proceedings of the Symposium were inaugurated by Professor Corneliu Penescu, Corresponding Member of the Academy, General Secretary of the Association of Scientists.

He was followed by Lecturer Dr. Contantin Ionescu, Director-General of the Central Statistical Board, whose address referred to the importance of the information system for economy and by Professor Nicolae Teodorescu, Member of the Academy, Vice-President of the Association of Scientists, who greeted the audience on behalf of this Association.

A total number of 88 reports were submitted on the occasion the Symposium. The international character of this scientific event was imparted by the 26 reports delivered by the foreign participants.

Particularly valuable studies and investigations have been reported during the plenary sessions.

Professor C. Penescu gave a lecture on "Automatics and Information Sytems". Among other remarks, the speaker pointed out that the most advanced form of management activities is represented by a combination of automatics, informatics and the electronic computation resources, using arithmetic and logical conditions in decision-making.

The paper by Academician N. Teodorescu, regarding "The Mathematical Models Used in Operations Research" roused a high interest. The author emphasized the need for a unitary conceptual framework which is essential for the practical application of operations research concepts. As to the more sophisticated disciplines, their direct relation to practice has to be taken into account, with the result that this responsibility must be shared by many categories of specialists, among whom mathematicians should also be represented.

The paper headed "Information Systems in Small and Medium Organizations", presented by Mr. Schlumberger (France), described the technical and economic trends prevailing in this area, as well as a method for the efficiency appraisal and for the choice of the most suitable means in the new practice of computerizing management services. Mr. Schlumberger considers that the greater the number of simulated tests conducted and the larger the area of broadcasting the results of the study, in order to induce the revision of the small and medium organization managers'way of thinking, the more efficient the general plan will be.

The balance of relationships between the various economic branches is an essential tool in planning activities. The paper presented by Professor Dr. eng. N. Racoveanu and M. Altăr deals with this subject in describing the analogic simulation of this balance, based on the properties exhibited by the matrix of coefficients. In order to obtain during a relatively short time interval a great number of alternatives, the equation system of the balance has been written in matricial form:

$$(E - A)\ X = Y,$$

the differential system

$$\frac{dX}{dt} = -(E - A)\,X + Y$$

being programmed for computer processing.

The steady state conditions are satisfied, as the technological matrix $(E - A)$ is positively defined. The paper further analyzes a set of properties of matrix $(E - A)$.

In his report on the organization of university laboratories set up for studies in the field of automatics and informatics, Professor Dr. eng. W. Oppelt (Federal Republic of Germany) produced ample reference material and described the latest achievements accomplished by the Darmstadt Polytechnical Institute in this area.

A special interest was roused by the reports and lectures delivered by K. Sernyak (U.S.S.R.) on "Qualitative Assessment Methodology of Economic Information", by T. Kaszprak (Poland) on "Production Programming in Non-Ferrous Metals Processing", by M. Terrenoire (France) on the "Use of an Informational Criterion in the Analysis of an Inquiry", by A. De Maio, C. Roveda, Savini (Italy) on "A Problem of Distributing Commodities from a Central Stock", by G. Chopov (Bulgaria) on the "Application of Electronic Computers in Handling Economic Information in the Field of Material Supply in Bulgaria", by K. Rey (Poland) on "The Theory and Practice of the Algorithm Language Problems in the Field of Building", by E. Tudori, C. Cîrciumărescu, N. Chiforeanu (Romania) on "Some Aspects of Information Systems Utilization in Design", by F. Nistorescu (Romania) on "A Heuristic Programming Algorithm for the Simultaneous Operation of Many Machines".

The functional efficiency or the operational yield of information systems may be objectively assessed through the instrumentality of parameters taken from the information transmission theory and through the qualitative coefficients of information retrieval on demand. The shorter the transmission paths, the smaller the weight of those parameters in the respective estimations.

This subject matter of particularly high present interest has been approached in the lecture delivered by Academician Aurel Avramescu, under the heading "Some Contributions to the Economic Efficiency Computation of Information Retrieval Systems". The author pointed out that the attempts to restrict the economic efficiency to abstract parameters characterizing information transmission or retrieval succeed only to place limiting landmarks for the system's economy. Economic efficiency determination should be based on minimum cost calculations, just like the operation of an energetic system, for which the optimal running conditions associated to minimal losses, do not coincide with optimization conditions according to minimum cost.

Mr. H.I. Kroeber (Federal Republic of Germany) further gave a lecture, accompanied by film projections, on "Problems Concerning the Organization and Structure of the Information

Processing System". The speaker mentioned the new paths followed in the construction and design of information processing equipment, based on the standardization and simplification of technological processes. Using as an example the set of NRC Century computers, the new technique in their constructive design has been shown, as well as the logic of circuits and of some special stores, replacing the routinely utilized stores.

Lecturer C. Pintilie and A. Berca submitted the paper "Information Channels Multiplication in a Modern Organization". Problems such as the need of classifying information channels, their effective achievement, as well as the future developments in this field, were approached in this study.

The above-mentioned round-table discussions recorded a large attendance and constant interest up to the end. They were successively presided by A. Schlumberger (France), Academician Nicolae Teodorescu and Prof. Dr. eng. N. Racoveanu.

The closing meeting took place on October 20, 1968 in the auditorium of the Academy of Economic Studies.

Greeting speeches and appreciations of the Symposium proceedings were addressed by U.A. Luoto (Finland), P. Macskasy (Hungary), and by Prof. Dr. eng. W. Oppelt (Federal Republic of Germany). The concluding remarks were pronounced by Prof. C. Penescu, corresponding member of the Academy.

It may be finally stated that the Symposium "Applications of the Information System in Economy" ensured a broad exchange of views among specialists belonging to various scientific branches and strengthened of the existing bonds between the scientists and production specialists, with a view to applying the investigation results in the economic and social activities.

The Editorial Board