tive theory for information retrieval. Proceedings of the Seventeenth Annual International ACM SIGIR Conference on Research and Development Information Retrieval, Dublin, Ireland, 1994.

International Federation of Documentation (FID 478). (1973). VINITI, Moscow.

Jahoda, G. (1966). Information needs of science and technology. Background review. In Proceedings of the 1965 Congress FID, Washington, DC, October 7–16, 1965, vol. 2. Washington, DC: Spartan Books.

Lancaster, F. W. (1968). Information retrieval systems: characteristics, testing, evaluation. New York: John Wiley & Sons.

Lancaster, F. W. (1979). Information retrieval systems: Characteristics, testing, evaluation. New York: John Wiley & Sons.

O'Connor, J. (1967). Relevance disagreements and nuclear request forms. American Documentation, 18(3), 165–177.

O'Connor, J. (1968). Some questions concerning "information needs." American Documentation, 19(2), 200–203.

Schamber, L. (1996). What is a document? Rethinking the concept in uneasy times. Journal of the American Society for Information Science, 47(9).

Shannon, C. E. (1951). The redundancy of English, In Cybernetics, Transactions of the Conference, New York.

Shannon, C. E., & Weaver, W. (1959). The mathematical theory of communication. Urbana, IL: The University of Illinois Press.

Voiskunskii, V. G., & Frants, V. I. (1974). Correction of query formulations in documentary information retrieval systems. Nauchno-Tekhnicheskaya Informatsiya (NTI), ser. 2, no. 2, 1–12.

Webster's third international dictionary of the English language, Unabridged. vol. 1, (1961). Springfield, MA: Merriam.

Wiener, N. (1954). The human use of human beings, cybernetic and society. Boston: Houghton, Mifflin.

Wiener, N. (1961). Cybernetics or control and communication in the animal and the machine. New York-London: The MIT Press and John Wiley & Sons.

Bibliographic Remarks

Additional material about information need can be found in the following publications.

Frants, V. I., & Brush, C. B. (1988). The need for information and some aspects of information retrieval systems construction. Journal of the American Society for Information Science, 39, 86–91.

Frants, V. I., Shapiro, J., & Voiskunskii, V. G. (1996). Development of IR systems: New direction. Information Processing and Management, 32 (3), 162–175.

Kochen, M. (1975). Organizing knowledge for coping with need. Paper presented at the Third International Study Conference on Classification Research, Bombay, India, January 1975.

Lancaster, F. W. (1979). Information retrieval systems: Characteristics, testing, evaluation. New York: John Wiley & Sons.

For more details about the notion of information and its properties the reader is referred to the following publications.

Cherry, C. (1966). On human communication. (2nd ed.). Cambridge, MA: MIT Press.

Wiener, N. (1961). Cybernetics or control and communication in the animal and the machine. New York-London: The MIT Press and John Wiley & Sons.

3

Information Crisis

3.1

Introduction

Satisfying an information need (IN) is one of the eternal human problems. However, it is also an eternally new problem, because the conditions of life, its content, and human beings themselves are constantly changing. At each stage, arrayed in long-familiar attire, this problem includes something new and unique, organically corresponding to its own time.

Historically, two methods of satisfying an IN have developed. The first method is to try to obtain the necessary information from the mass of information that is available to human beings, and the second is to extract from nature the necessary information oneself. In these terms, the testimony of Emilio Segre, a Nobel laureate in physics, about his joint work with Enrico Fermi, another prominent physicist and Nobel laureate, is of interest (Segre, 1973). He recalled that Fermi often preferred to derive the formulas of interest to him, instead of looking for them in the specialized literature. Fermi repeatedly made wagers with his friends that he could do this faster than they could find this or that formula in the literature, and he usually won such wagers.

The path by which the user extracts information to satisfy an IN belongs to the sphere of human activity called science. When following the other path, seeking answers from masses of available information, we are dealing with information already obtained (as a rule, with the help of science), and processes such as gathering, storing, retrieving, and distributing this information, as well as several auxiliary processes that furnish these basic processes, pertain to so-called information activity.

Information activity is closely associated with science, because information sources circulating within the framework of this activity are, as a rule, the product of science. In other words, the more successfully scientific activity is carried out, the more information circulates within the framework of information activity. However, in a certain sense, the two methods of satisfying the IN are in contradiction. For the first approach, there is always too much informa-