Online Bibliographic Searching:

A Learning Manual

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and Susanna Schweizer

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PREFACE

This book is a beginner's guide to the skills necessary for the retrieval of information from computerized bibliographic files, with special emphasis on techniques of online interactive searching. It is designed to serve as a self-instruction manual, and, as such, to encompass both the theoretical and the practical.

The opening chapter provides an overview of the subject at hand. Chapter 2 discusses the fundamentals of online bibliographic searching, while Chapters 3 and 4 deal with question negotiation and searching database indexes in more detail. Multi-database searching is covered in Chapter 5; the system features of major bibliographic database vendors (specifically DIALOG, SDC, and BRS) are addressed in Chapter 6. Chapter 7 considers the information specialists' role in planning, implementing, evaluating, and marketing online search services within the library.

Some may say that a beginner's guide to online bibliographic database searching should be arranged according to the order of steps one takes in the conduct of a search (first understand the indexes, then learn the search strategy, then undertake the search itself). We decided in planning this book that such an arrangement would be self-defeating. The beginner must have a general grasp of the process of searching itself before all else. Without this broad introduction, any discussion of indexes or strategy would not be meaningful as it could be to readers with little exposure to online searching.

The book concludes with a discussion of the future of online searching. Numerous search examples, illustrations, and graphs are provided whenever necessary to supplement and highlight key points in the text.* Additional

*Graphics by Ching-chih Chen and searches by Susanna Schweizer.

pertinent references to each subsection are provided at the end of each chapter together with an extensive glossary at the end of the book. The manual is straightforward in language and style so as to provide an ideal introduction for practitioners and students of library science without extensive exposure to online bibliographic searching.

We debated whether we should cover the use of the three major vendors' systems equally and interchangably to provide a basic and unbiased introduction to all. Our experience in the actual teaching of online courses has convinced us that it is simply too confusing to teach the basic uses of three systems at once. We have found that it is more important to use one system consistently throughout the instruction of search fundamentals with a specific chapter devoted to the comparison of the three vendors' systems. We chose DIALOG over its competitors because of the availability of its hours (which are more flexible for instructional online use), its numerous accessible databases, and its illuminating lab workbook. The use of DIALOG as an example throughout the text reflects our desire for clarity alone and should not be construed as an implicit endorsement of that vendor. DIALOG is discussed in relation to SDC and BRS specifically in Chapter 6. This manual is intended to serve as a tool for self-instruction as part of an ongoing, hands-on learning process. To enhance the learning experience, this guide may be used in tandem with *DIALOG Lab Workbook*; pursuant to this, the Appendix of this manual includes the solutions to that workbook's online exercises. There are several different ways of approaching the exercises; ours demonstrates only one of the viable solutions.

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OVERVIEW

1.1 DATABASES

A database is a collection of information (or data) in machine-readable form accessible by computer. Databases differ in subject, scope, format of source document, currency, and chronological coverage.[1] The classification of databases presented in *A Directory of Online Databases*[1] is repeated below:

REFERENCE DATABASES

This type of online database refers those who consult it to the source best able to meet their prestated needs. The sources could be individual or institutional, and provide additional details or a complete text. Reference databases can be further divided into the following:

- BIBLIOGRAPHIC: This database contains citations and/or abstracts of printed material such as newspapers, magazines, books, journal articles, patents or technical reports.

- REFERRAL: This database usually directs those who consult it to non-print sources such as organizations, expert individuals and audio-visual materials.

SOURCE DATABASES

This order of database is referred to by the reference database; it is

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[1] Ruth N. Landau, David M. Abels, and Judith Wanger. *Directory of Online Databases.* Vol. 2, No. 1. Santa Monica, CA: Cuadra Associates, Inc., Fall 1980. p. 7.

the "final source" which makes the complete text or full data available to those who seek it. Source databases can be further categorized into the following:

- NUMERIC: Usually taking the form of research data in a statistically manipulated form, this database is most often presented as a time series comprising measurements (such as tons or dollars) over time for a given variable.

- TEXTUAL-NUMERIC: This type usually includes records composed of a number of data elements or subtypes with a combination of textual information and numeric data.

- PROPERTIES: This database consists of straight data (typically concerning chemical or physical properties) in a dictionary or handbook format.

- FULL TEXT: This includes the complete text of a newspaper item, specification, court decision, etc.

1.2 WHAT IS ONLINE BIBLIOGRAPHIC DATABASE SEARCHING?

An online bibliographic database search involves the direct communication between a searcher and the computer system using a conversational program dialogue. The searcher, using a specific set of predefined commands directs the computer in searching machine-readable indexes for certain information. The searcher, by typing the appropriate commands into a terminal, can tap the resources of the entire system (see Figure 1.1).

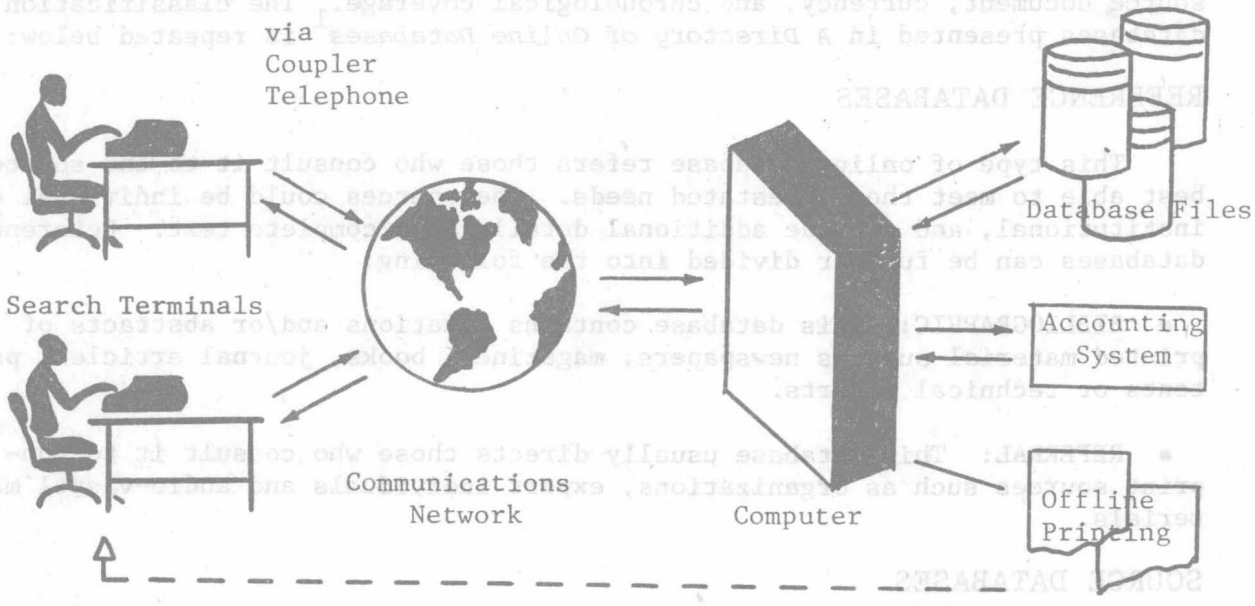

Figure 1.1 Request for information transmitted from searchers to database system and back.

Online bibliographic searching is interactive and, in many ways, like a conversation between a searcher and a computer system. Thus, the user can review the response to his inquiry and, if the results are unsatisfactory, modify the inquiry and review new results. This process of review and modification allows the user to search a database carefully and systematically until results precisely fulfill the original information need. This interactive searching is possible through the use of a communications network. The two most commonly used ones are: TELENET (see Figure 1.2) and TYMNET.

1.3 DATABASE PRODUCERS AND VENDORS

The organization which creates a database is known as the database producer. It often publishes a corresponding print index. For example, American Psychological Association is both the publisher of the printed index *Psychological Abstracts* and the producer of the PSYCHINFO database.

A database producer can be classified according to its organizational type. For example, database producers are listed by type with examples for each category in the following:

PRODUCERS	DATABASE(S)
Commercial	
Predicasts Producer, Inc.	PROMPT F & S INDEXES
Data Courier	ABI/INFORM PHARMACEUTICAL NEWS INDEX
Institute for Scientific Information	SOCIAL SCISEARCH SCISEARCH
ABC-Clio, Inc.	AMERICA: HISTORY AND LIFE ARTBIBLIOGRAPHIES MODERN HISTORICAL ABSTRACTS
Government	
Educational Resources Information Center	ERIC
National Agricultural Library	AGRICOLA
National Library of Medicine	MEDLINE and others
U.S. Government Printing Office	GPO MONTHLY CATALOG
Professional Society	
American Society for Metals	METADEX WORLD ALUMINUM ABSTRACTS
American Psychological Association	PSYCHINFO
Institute of Electrical Engineers	INSPEC

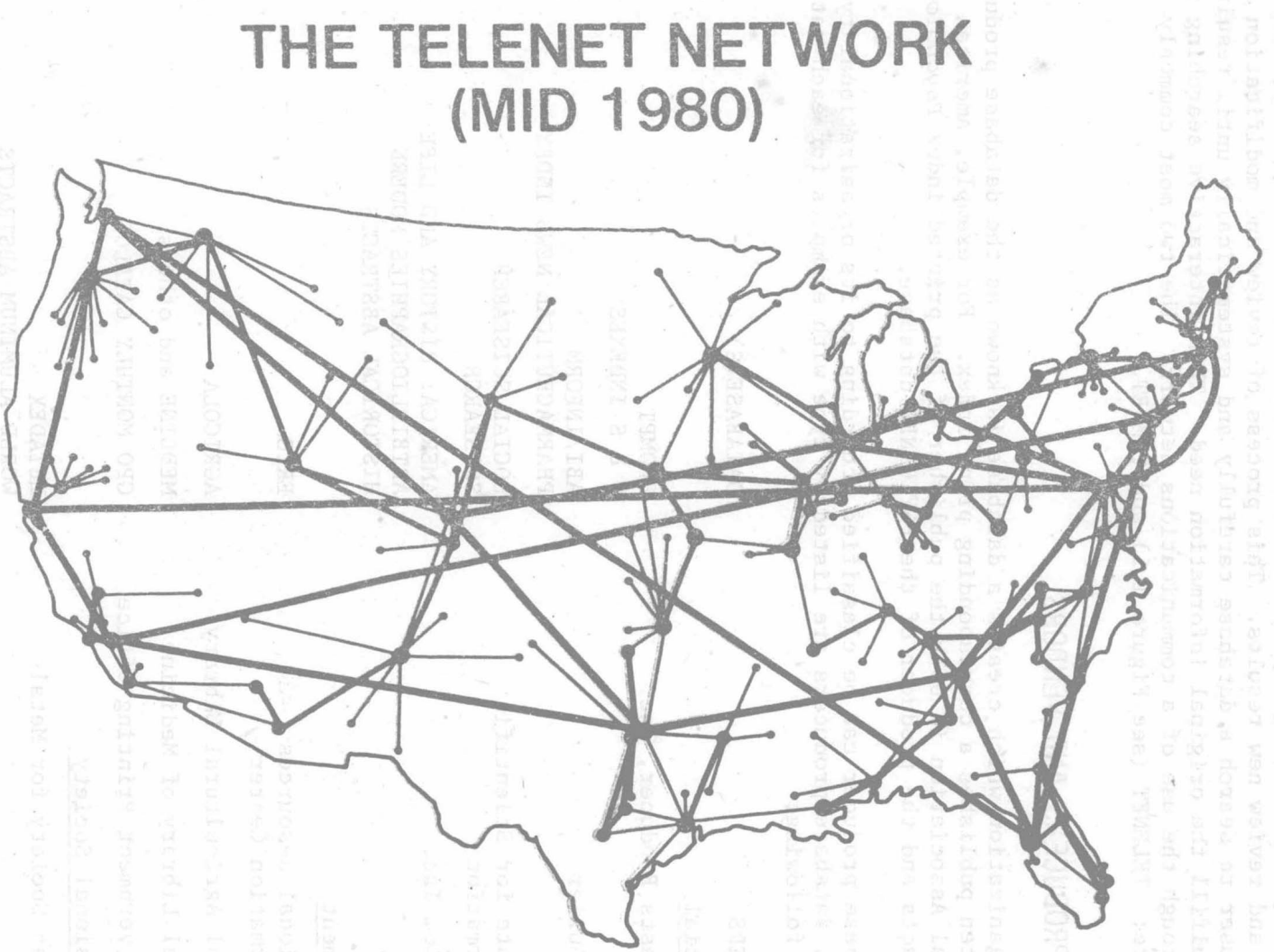

Figure 1.2 TELENET network's US schematic routes.
(Courtesy of TELENET)

A database vendor is the organization which facilitates the searching of databases. The vendor obtains the machine-readable databases from the producers, and processes them into a format suitable for interactive searching. Once the database is prepared, the vendor makes it available to anyone wishing to do so using the vendor's search system.

The three major online database vendors are:

- Bibliographic Retrieval Services, Inc. (BRS)
  702 Corporation Park
  Scotia, New York 12302 U.S.A.
  phone: (800) 933-4707

- DIALOG Information Services, Inc. (formerly Lockheed)
  3460 Hillview
  Palo Alto, CA 94304 U.S.A.
  phone: (800) 227-1960 (Customer Information)

- System Development Corporation (SDC)
  Search Service
  2500 Colorado Avenue
  Santa Monica, CA 90406 U.S.A.
  phone: (800) 421-7229

Of these three, DIALOG has the most online databases publicly available. The databases provided by each of the three are listed in Section 1.10 of this Chapter. The significant differences in searching the same database on two or three systems is discussed in Chapter 6.

1.4 ADVANTAGES OF ONLINE BIBLIOGRAPHIC SEARCHING

- SPEED: The time required to complete most searches is 10 to 15 minutes, a fraction of the time required by a corresponding manual search in printed indexes.

- FLEXIBILITY: Online database searching increases the number of points by which an information source may be accessed. Examples of added access points include language, type of publication, codes, author affiliation, price, country of publication, and abstract. These additional access points enable a searcher to tailor a search to a client's precise needs.

- COMPREHENSIVENESS: An organization need not regularly purchase, store, and organize large numbers of sources in anticipation of an information need. Access to online bibliographic databases enables an organization to comprehensively acquire those bibliographic information sources when it needs them.

- CURRENCY: Machine-readable indexes are generally updated on a monthly, weekly, or even daily basis. Thus, the information included usually is more current than that contained in manual indexes.