Kirk-Othmer Encyclopedia of Chemical Technology.
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DATABASES

Data collection and database statistics have been published periodically since the 1970s with the onset of the worldwide database industry (1). Available information includes the growth of the database industry as represented by the increase in the number of database records, online searches, existing databases, database entries in the computer readable databases (CRDB), and database producers and vendors. Databases are analyzed in terms of geographic region and status of the producers, where the latter refers to the sector of society from which they come, eg, government, commerce/industry (for-profit), or not-for-profit (NFP), which includes academia and mixed sectors. Databases are also considered in terms of the form or representation of the data and intellectual content in the database and the medium for access and/or distribution (see General References).

The significance of databases to chemical technology arises because there are so many publications in active research areas, that it is nearly impossible for an individual to read or recall all citations appearing in journal articles, conference proceedings, dissertations, technical reports, statistical tables, directories, or other documents such as those in the intellectual property arena. Thus a number of database organizations, also called electronic libraries or knowledge banks, have developed. These provide rapid access to the international literature for researchers who have access to computers, modems, and a telecommunication network, as well as a knowledge of a straightforward search and retrieval command language or a menu-driven system (2).

Chemically related database searches can be used to establish concepts and patentable ideas. For instance, searches have identified researchers using particular monomers in a potentially patentable latex formulation; found precedents for a polymeric emulsifier; summarized publications of people being considered as consultants, expert witnesses, employees or speakers to an industrial group; and provided market description information for a new pigment manufacturing firm to identify target markets.

Some driving forces for undertaking a search are competitive and strategic factors related to market needs. Information from databases might help determine the markets for an emerging technology; how amenable the technology is to production scale-up; the patents held by competitors; what regulatory issues apply; what toxicity data are available and what is known about safe-handling or shipping; who manufactures the chemicals required, and what the physical and chemical properties are; what the manufacturing costs and pricing implications are; where company headquarters, subsidiaries, and executive information are located; and what information can be retrieved from molecular structure searches.

1. Growth in Databases

Size of the database industry can be measured in terms of the number of database records, databases, database entries in CRDB, database producers, database vendors, or online searches. Growth in number of database entries, databases, producers, and vendors is plotted in Figure 1. The slowest growth is at the vendor level, the fastest growth is in database files.

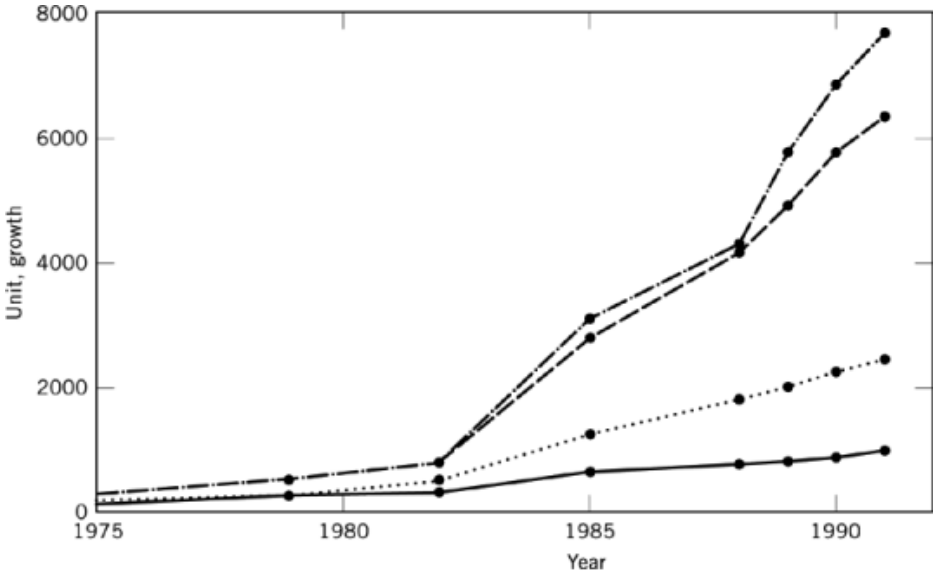

Fig. 1. Growth in number of (—), database vendors; (...), producers; (— — —), entries; and (._._), databases.

The 1992 edition of the CRDB (1) covers 7637 databases and unique subfiles in 6261 entries. Some of these entries represent families of databases, ie, sets of subfiles, rather than single databases. Databases are sometimes called files and members of families of databases are sometimes called subfiles. Some 848 of the files are "obit" entries, meaning that the producer no longer maintains the file, the producer no longer makes the file publicly available, the file is no longer available from the vendor indicated in a prior edition of CRDB, or the status of the file and its producer could not be verified. The statistics herein relate to the 6261 database entries known in 1991, rather than to the individual databases and subfiles.

Many database producers provide online access to their databases or distribute their databases on compact disc read-only-memory (CD-ROM) and so are also considered vendors or producer/vendors. Whereas numerical growth in vendors is indicated (Fig. 1), the success of the database industry is largely a result of the transition of the information industry from paper-based to computer-based services (see Computer technology; Information retrieval, information storage materials). Thus industry growth can also be measured in terms of the increase in use of computer-readable databases as exemplified by the number of searches.

1.1. Database Records

From 1975 through 1991, database records increased from 52 million to 4.06 billion, a factor of 77, and the number of databases grew from 301 to 7637, a factor of 24. Database entries grew from 301 to 6261, a factor of 20. The number of producers continues to grow somewhat more slowly in part because individual producers create multiple databases. There were 2372 producers in 1991 and the average producer published 3.2 databases. The number of database vendors, who offer services from numerous databases, increased from 105 (1975) to 933 (1991).

The growth in number of database records has not been proportionate to the growth in number of databases. That is, the average size of a database has not remained constant. The growth in number of records was rather slow until 1983 when it reached 310 million. From 1983 to 1984 it more than tripled; from 1984 to 1987 it doubled; and from 1987 to 1991 it nearly doubled again, reaching more than four billion records. The average database, which contained 173,000 records in 1975, reached approximately 500,000 records in 1985.

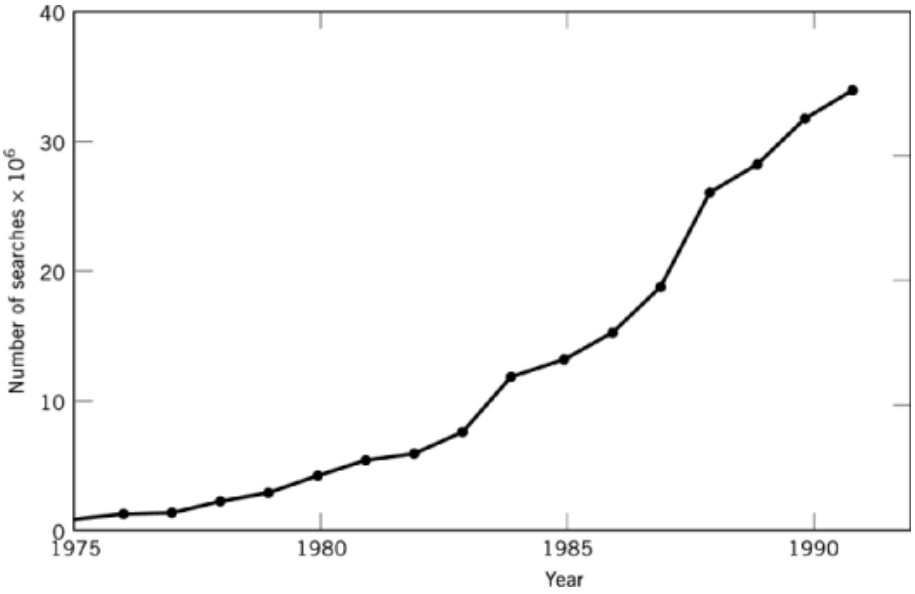

Fig. 2. Growth in number of online database searches on principal U.S. vendors of word-oriented databases.

The average database size is highly skewed, however, because 259 databases contain more than one million records. In fact, of the 259 have more than 100 million records, and another 45 have between 10 million and 100 million records. Excluding these 259 very large databases, in 1991 the average database entry contained 70,645 records and the average database contained 59,950 records.

The entities counted as database records vary widely but generally range from 200 to 2000 words. Records may be citations, abstracts, news stories, biographical records, unique chemical substance property data, recipes, time series, software programs, images, or descriptions or listings of virtually anything. Perhaps the single largest factor affecting the average database size was the increase in commercially available business databases that started in the mid-1980s. Among the very large databases, and in descending order of frequency, are databases containing bibliographic information (references, abstract, or full text); company information; time series; patent information; telephone and address listings; personnel, biography, and employment listings; chemical data; demographic data; news; vocabulary (terms, words, or thesauri) entries; trademarks; and procurements and contracts.

1.2. Online Searches

The real success or acceptance of computer-readable resources and the technology for accessing them is indicated by the growth in the use of the databases. Use can be measured both in terms of the number of searches, which translates to connect time, and in terms of expenditures for searching. Some data regarding the use of databases through primary vendors of word-oriented databases in the United States are available (3). These vendors include Mead Data Central, West Publishing Company, DIALOG Information Services, ORBIT Search Service, BRS Information Technologies, and the U.S. National Library of Medicine. Figure 2 shows the growth in online database use for databases on principal U.S. systems offering word-oriented databases. Searches increased from 750,000 in 1974 to over 34 million in 1991. These figures represent a specific subset of vendors, however, and if transactional, eg, stocks, electronic ordering, credit checking, airline reservations, etc, and consumer service systems were added, the number of searches would be much larger.

Table 1. Database Classes Normalized to One Class per Database

	Number[a,b]									
Class	1988		1989		1990		1991		1992[c]	
word-oriented	2797	(69)	3370	(70)	4080	(72)	4491	(72)	4925	(70)
number-oriented	1136	(28)	1236	(26)	1298	(23)	1370	(22)	1533	(22)
image	14	(<1)	34	(<1)	113	(2)	145	(2)	272	(4)
audio	1	(<1)	2	(<1)	16	(<1)	27	(<1)	83	(2)
electronic services	90	(2)	134	(3)	170	(3)	172	(3)	146	(2)
software	4	(<1)	10	(<1)	12	(<1)	55	(1)	39	(<1)
Total	*4042*	*(100)*	*4786*	*(100)*	*5689*	*(100)*	*6261*	*(100)*	*6998*	*(100)*

[a] Value is number of database entries in CRDB.
[b] Value in parentheses is percentage.
[c] Estimates for individual databases in 1992 can be calculated by multiplying the percentages by 7907.

Whereas Figure 1 represents worldwide data for all types of publicly available databases, Figure 2, showing growth in database searches, represents only a portion of those databases, ie, U.S. usage of word-oriented databases in the information center/library market.

1.3. Future Growth

The database industry is dynamic, changing and growing every year. There is no sign of leveling-off in the 1990s. New media for distribution and access to databases have increased the potential for attracting users. In particular, the development and distribution of CD-ROM databases has greatly increased the use of computer-readable databases in universities and colleges where cost has often been a barrier to access. At the same time, there has been a decrease in the use of online searching of those databases that are also distributed on CD-ROM. Decreases have been noticed particularly on ERIC, PsycINFO, NTIS, and MEDLINE, which are all databases well used in academia.

2. Classification of Databases

2.1. Form of Data

Databases can be classified in many ways. One method is by form of data representation, ie, data may be in the form of words, numbers, images, or sounds. The corresponding databases may then be considered to be word-oriented, number-oriented, image-oriented (video), or sound-oriented (audio). Data representation affects file structures and software for search and data retrieval. Thus the structures and search techniques vary considerably among these four basic classes. Table 1 gives databases as classified by form of data representation.

For purposes of tracking statistics on database classes, several subclasses for word-oriented and number-oriented databases have been established. Word-oriented databases can be subdivided into: bibliographic, patent/trademark, directory, dictionary, full-text, and other categories. The first publicly available databases were word-oriented. In the 1960s and 1970s, most databases were bibliographic and thus fell within the word-oriented class. Numeric databases can be subdivided into: transactional, statistical, time series, properties, and other categories. Publicly accessible image and audio databases did not exist until the mid-1980s. Audio and image databases are being developed for Apple Macintosh II, IBM and IBM clones, and NEXT microcomputers. With the popularization of hypertext and CD-ROM systems, more multimedia databases are expected.

Table 2. Database Classes Multiple Classes per Database Entry

	Number[a,b]									
Class	1988		1989		1990		1991		1992	
word-oriented	3147	(69)	3409	(70)	4213	(72)	4661	(72)	6497	(71)
number-oriented	1278	(28)	1250	(26)	1360	(23)	1422	(22)	1974	(21)
image	16	(<1)	34	(<1)	98	(2)	151	(2)	358	(4)
audio	1	(<1)	2	(<1)	16	(<1)	28	(<1)	109	(1)
electronic services	101	(2)	136	(3)	178	(3)	179	(3)	193	(2)
software	5	(<1)	10	(<1)	12	(<1)	57	(1)	52	(1)
Total	*4548*	*(100)*	*4741*	*(100)*	*5877*	*(100)*	*6498*	*(100)*	*9183*	*(100)*

[a] Value is number of database entry-class assignments in CRDB.
[b] Number in parentheses is percentage.

Multimedia CD-ROM interweaves audio, video, and ASCII text so that these can be played simultaneously and can even use different audio tracks for different languages.

Many databases can be classified in multiple ways because of multiple type data, eg, text and numeric data, text and image data, image and audio data, etc. Also included in the data presented in Table 1 are two additional classes of databases, electronic services and software. Both of these data types could also be classed by form of representation because of use of words and numbers. However, the way in which these databases are used is different and they have special characteristics. Thus they are presented as additional classes. Whereas electronic information services such as bulletin boards, electronic mail, and electronic conferencing contain data that are transitory and nonarchival, these must be included among databases because several of the principal vendors sell these services in the same way as database search services are sold.

Electronic mail and electronic conferencing services are not counted as separate databases, but when such electronic services are included with a database they are counted as aspects of the associated database and the database is classified accordingly. Several commercial online services make software databases available online, eg, the Microsoft Programmers Library, MacTutor, and Atari RoundTable. Several producers offer CD-ROM databases containing software. Such software databases contain the coding and documentation for software packages and so are classified as software databases. These are different from directories of software that are classed as directory databases.

Databases in CRDB have been coded according to the six classes described (1). Table 1 provides the number and percentage of databases associated with the six database classes. Despite multiple classes assigned to some databases, all classes are normalized to the 6998 database entries in CRDB. Table 2 presents the same data without the normalization. Because a single database entry may have more than one class assignment, there are more database entry-class assignments than database entries in CRDB.

The percentage of word-oriented databases continues to increase at a faster pace than numeric databases. The number of image databases was 358 in 1992, greater than twentyfold increase from 1989. Audio databases rose from 1 in 1988 to 109 in 1992.A breakdown of the subclasses within word-oriented databases is given in Table 3, showing that full-text databases have surpassed bibliographic ones. Directory databases are the third most numerous.

2.2. Geographical Origin

The 6261 database entries listed in CRDB are produced in eight geographic regions: Africa, Asia, Australia, the Far East, Eastern Europe, Western Europe (including the United Kingdom), North America, and South America. No databases from Antarctica are listed. The geographical distributions of database entries and databases are shown in Table 4. Asian databases are from China (both Mainland and Taiwan), Hong Kong,

Table 3. Word-Oriented Databases Subclasses

	Number[a,b]									
Subclasses	1985[c]		1989		1990		1991		1992	
bibliographic	1094	(57)	1223	(36)	1367	(32)	1425	(31)	1715	(26)
patent/trademark[d]			58	(2)	80	(2)	85	(2)	47	(<1)
full-text	535	(28)	1412	(41)	1786	(42)	2040	(44)	3077	(47)
directory	287	(15)	707	(21)	952	(23)	1074	(23)	1611	(25)
dictionary	10	(<1)	9	(<1)	23	(1)	32	(<1)	47	(<1)
other					4	(<1)	5	(<1)	0	(0)
Total	*1926*	*(100)*	*3409*	*(100)*	*4212*	*(100)*	*4661*	*(100)*	*6497*	*(100)*

[a] Value is number of database entries in CRDB.
[b] Value in parentheses is percentage.
[c] In 1985 each database was classified in only one way; in subsequent years databases were classified in one or more ways.
[d] In 1985 patent/trademark information was included as part of bibliographic.

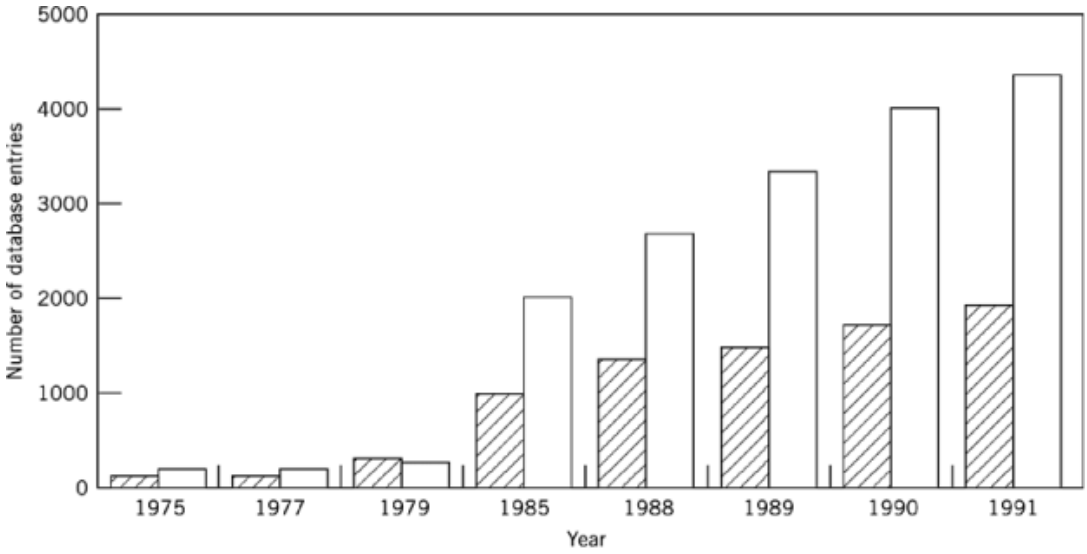

Fig. 3. U.S., □, versus non-U.S.,▨, database entries. Growth by year.

India, Israel, Philippines, Japan, Singapore, Thailand, and the CIS. The only regions having more than 1000 databases are North America (>4400) and Western Europe (>1400). The majority of databases, 4368 in 1991, are held in the United States. Figure 3 compares U.S. and non-U.S. database entries. Counties, other than the United States, having 100 or more databases are England, Canada, Germany, France, Japan, and Australia. Databases are produced in a variety of languages.

2.3. Subject Categories

The determinant for user selection of a database is usually subject matter. That is, when chemical information is desired, a chemical database is selected. The form or media of the database is of secondary importance. The type of search may dictate the need for a full-text or statistical database. If none exists, however, a bibliographic database in the topic area may be used to locate full-text or numeric compilations in hard-copy form.

Table 4. 1991 Database Entries and Databases by Geographic Region

Region	Database entries[a]		Databases[a,b]	
Africa	7	(<1)	8	(<1)
Asia	28	(<1)	34	(<1)
Australia	119	(2)	146	(2)
Far East	155	(3)	189	(3)
East Europe	11	(<1)	13	(<1)
West Europe	1473	(24)	1797	(24)
North America	4424	(71)	5396	(71)
South America	44	(<1)	54	(<1)
Total	*6261*	*(100)*	*7637*	*(100)*

[a] Value given in parentheses is percentage.
[b] Normalized from database entries reported.

Table 5. Databases by Subject

	Number[a]							
Category[b]	1989		1990		1991		1992	
business	1687	(33)	1956	(33)	2101	(33)	2624	(33)
general	327	(6)	416	(7)	450	(7)	700	(9)
health/life science	576	(11)	651	(11)	690	(11)	728	(9)
humanities	184	(3)	216	(4)	248	(4)	314	(4)
law	447	(9)	531	(9)	574	(9)	885	(11)
multidisciplinary[c]	335	(7)	368	(6)	366	(6)	296	(4)
news	186	(4)	233	(4)	291	(4)	385	(5)
social sciences	393	(8)	418	(7)	453	(7)	447	(6)
sci/tech/engineering	996	(19)	1154	(19)	1210	(19)	1492	(19)
Total	*5131*	*(100)*	*5943*	*(100)*	*6383*	*(100)*	*7841*	*(100)*

[a] Values in parantheses are percentages.
[b] Multiple subject categories may be assigned to a database.
[c] Academic.

Databases can be categorized by subject as given in Table 5, where the numbers reflect subject category assignments rather than numbers of databases. That is, many databases can be categorized by two or more subjects eg, the Bio-Business database can be categorized as belonging to both the health/life sciences and the business categories. Any database reflecting a reasonable percentage of a subject category was assigned a code to that category. A subject category that was incidental to the database was not assigned.

Business databases remain number one among all database categories, followed by science/technology/engineering and then by health/life science. Many business databases are cross-coded with law and/or with news. Through 1988 there was also a consumer interests category referring to databases covering information of interest or use to consumers. The consumer interests category was distinct from databases about consumers. Most databases that are about consumers relate to market studies or demographics and are categorized as business or social sciences.

2.4. Medium of Distribution

Another way of looking at databases is in terms of the recording medium used for distribution or access. Table 6 indicates the number and percentage of databases recorded on various types of media. In 1991, there were 8159 instances of database media combinations for the 7636 databases in 6261 database entries. In Table 6,

Table 6. Media for Database Distribution or Access

	1990			1991		
Medium[a]	Number of occurrences	DBs[b]	Entries	Number of occurrences	DBs[b]	Entries
online	4018	3608	3041	4170	3903	3200
batch	1252	1124	948	1321	1236	1014
CD-ROM	715	642	541	1019	954	782
diskette	626	562	474	695	651	533
magnetic tape	906	814	686	954	893	732
Total	*7517*	*6750*	*5690*	*8159*	*7637*	*6261*

[a] A database may be available on several media.
[b] DBs = Databases.

Table 7. Databases Classified by Producer Status, %

Producer status	1985	1988	1989	1990	1991	1992
government	21	20	17	17	16	15
commerce/industry	57	65	68	68	70	75
not-for-profit[a]	11	13	12	12	12	9
mixed	11	2	3	3	2	1
Total	*100*	*100*	*100*	*100*	*100*	*100*

[a] Includes academe.

the distribution of instances over the types of media is used to normalize media for the number of entries and databases.

2.5. Producers

The producers of databases are sometimes called database publishers because they make public their databases. Some producers publish hardcopy counterparts to databases and so are publishers in the traditional sense; others publish data only in electronic form. Database producers are responsible both for the determination of content and for database production. Most producers offer their databases for lease or license to private organizations or database vendors. Vendors offer database search services to the marketplace on a fee basis. An increasing number of producer/vendors such as Mead Data Central, U.S. National Library of Medicine, and DRI/McGraw-Hill (formerly Data Resources), offer search services (batch or online) from their own databases as well as from the databases of other products.

Producers of databases can be classified in terms of a country's infrastructure. Identifiable groups are the government, commerce/industry, not-for-profit (NFP) which includes academe, and mixed status. In the 1960s and 1970s, most databases were produced by U.S. governmental organizations such as the National Aeronautics and Space Administration (NASA) and Atomic Energy Commission (now the U.S. Department of Energy). In the late 1960s and 1970s, the mostly professional society-based NFP databases also gained prominence as reflected in increasing use. Both government and NFP databases continue to be important resources, particularly in the sciences. As outlined in Table 7, however, between 1977 and 1991, the governmental and NFP databases decreased as a percentage of total available databases, whereas commercial databases have continued to increase, comprising 70% of the total databases in 1991.

Although government databases have decreased percentagewise, many commercial databases are built on government data. Census data, for example, are collected at considerable governmental expense. Commercial database producers can take these data, add value to them, and then resell this information as a commercial database product.

Some databases are produced either by organizations having mixed status or by more than one organization. The majority of these databases is produced by a mixture of governmental organizations or an organization representing more than one government, such as the United Nations or the European Economic Community.

2.6. Vendors

Database vendors provide value added processing of databases and offer search services, online and/or batch, or distribute CD-ROM products to database users. Vendors also provide the technology for accessing databases.

Value is added to databases in several ways: through database preparation (loading); by means of the special capabilities of the vendor's search software; and through related services such as online document ordering and selective dissemination of information (SDI)/current awareness. During the 1960s, database vendors in the United States were often referred to as tape spinners. In Europe, vendors are generally called hosts. Vendor is the preferred term among database users and it is also the term most frequently used in the literature to designate the organizations that offer computer-based database search services.

Among the primary vendors of abstracting and indexing databases are DIALOG Information Services, BRS Information Technologies, ORBIT Search Service, U.S. National Library of Medicine, Questel, Pergamon Financial Data Services, and Data-Star. Principal vendors of full-text databases are Mead Data Central, West Publishing Co., NewsNet Inc., Dialog Information Services, Inc., DataTimes Corp., and STN International. Vendors of numerica business databases include the WEFA Group (formerly Wharton Electronic Forecasting Associates and Chase Econometrics), Reuters Information Services (Canada) Ltd. (formerly I.P. Sharp Associates), and DRI/McGraw-Hill. Examples of vendors of numeric scientific databases are CAN/SND and FIZ Karlsruhe's INKADAT. Vendors of consumer oriented databases include CompuServe Information Service and PRODIGY.

Producers who serve as vendors for their own databases are more numerous than vendors that offer services from databases produced by other organizations. More than 650 producer/vendors plus some 270 traditional commercial database vendors are listed in CRDB(1). Only those vendors that offer search services or distribute CD-ROMs for databases other than their own come under this vendor classification (1). Vendors that offer services solely from databases they themselves produce are listed as database producers.

3. Connecting to Databases

3.1. Online Connections

One highly reliable telecommunications network is DIALNET, offered by DIALOG. DIALNET offers dial-up access from over 50 principal U.S. cities at 300, 1200, 2400, and higher baud rates to 9600. Other networks for users in the United States and Canada include SprintNet or TYMNET networks. INWATS and INTERNET access is also available. In other countries, timeshare telecommunications access is available through the local PTT; rates vary from country to country. Access is also available through services such as TWX, international telex, outward WATS or FTS; for these services, the user bears the communication charges directly (4).

3.2. Using a Personal Computer

A personal computer can be used to communicate with online services when the following three items are available (5): (*1*) some form of communications software which must be synchronous and compatible with the particular computer. DIALOGLINK, available from DIALOG, may be used with IBM or IBM-compatible personal computers. A shareware package called PROCOMMhas been reviewed favorably for lab computer usage (6). A number of similar software packages are also available for Apple computers; (*2*) a modem which must also be compatible with the computer. Modems may be internal or external to the computer, but if external,

a serial interface card must be internally installed; and (*3*) a dedicated telephone line which allows no transfers or call-waiting. Call-waiting options may be disabled by computer command in dial-out code in some areas.

3.3. Using a Terminal

Dial-up terminals may also be used to access a vendor's databases; however, the terminal, personal computer, word processor, or microcomputer must all be compatible with specific functionalities. For example in order to access the DIALOG service these must all be TTY compatible; have ASCII coding; and be compatible for asynchronous transmission in full-duplex mode for communication through DIALNET, TELENET, or TYMNET at 30, 120, 240, or 960 character per second transmission speed. In addition, one also needs an EIA compatible (within the United States) or CCITT-compatible (non-U.S.) modem for dial-up.

The telecommunications protocol includes one start bit, two data bits, one even parity bit, and one stop bit, for a total of 10 bits per character. Alternatively, one start bit, eight data bits, no parity, and one stop bit (10 bits/character) may be used. The start bit, part of most protocols, may not be discussed in the documentation.

4. Databases Available

Databases may be viewed as a research tool for those in highly competitive fields such as science, engineering, and technology. This tool makes information available so that its user can make decisions based on comprehensive and timely data (7). A guide to commercially available databases relating to topics associated with science and technology follows.

4.1. Searching

A truncation feature (?) that allows word variation, eg, "mass spectrometry or mass spectroscopy" is used. Title searching is accomplished by using the added modifier "/ti" to bring up only titles. Commands to retrieve information generally use a protocol such as type-set number/format choice/number of records.

4.2. Chemistry

An alphabetical listing of the chemical databases available in 1992 together with brief descriptions follows (8): *AGRICOLA*, also called Agricultural Online Access, formerly called Cataloging and Indexing (CAIN), *Agricultural Library Forum (ALF)*, all aspects of agricultural sciences, U.S. National Agricultural Library products and services; *Agrochemicals Handbook*, active chemical substances used in pesticides, plant growth regulators, pest repellents, and synergists; *Analytical Abstracts Online (AA)*, general analytical chemistry and techniques; *Applied Science and Technology Index; Beilstein Current Facts in Chemistry*, organic compound structures and substructures; *Beilstein Online; Biological and Agricultural Index; Chemical Abstracts (CA) File; CA Registry File*, substance information and identification; *CA Search*, formed through the merger of two previously existing files, CA Condensates (CACon) and CA Subject Index Alert (CASIA); *Cambridge Structural Database (CSD)*, crystal structures of organic and organometallic compounds analyzed by x-ray or neutron diffraction methods; *CAOLD*, all areas of chemistry and chemical engineering; *CApreviews*, all areas of chemistry and chemical engineering; *CASREACT*, chemical catalysts, products, reactants, reagents, and solvents, covering general organic chemistry; *Chapman and Hall Chemical Database*, formerly called Heilbron, organic and organometallic chemical compounds, natural products, pharmaceuticals and antibiotics, bulk industrial chemicals, synthetic reagents and laboratory solvents, compounds having unusual structural, physical, or chemical properties and compounds of the metalloid elements; *CHEMEST*, physical and chemical properties of organic compounds; *Chemical Abstracts Service Source Index (CASSI)*, publications monitored for input to CAS

products; *Chemical Business NewsBase (CBNB)*, the chemical industry, with emphasis on European activities; *Chemical Journal of the Association of Official Analytical Chemists (CJAOAC)*, analytical chemistry; *Chemical Journals of John Wiley & Sons (CJWILEY)*, polymer and bipolymer science; *Chemical Journals of the American Chemical Society (CJACS)*, chemistry, biochemistry, chemical engineering, and related topics; *Chemical Journals of the Royal Society of Chemistry (CJRSC)*, chemistry; *Chemical Journals of VCH Verlagsgesellschaft (CJVCH)*, chemistry research; *Chemical Reactions Documentation Service (CRDS)*, new synthetic methods in organic chemistry; *Conference Papers Index (CPI)*, conference papers in science and technology; *Current Awareness in Biological Sciences (CABS)*, biological sciences and related areas; *Current Contents Search*, alternatively called *CC Search*, very broad physical and life sciences coverage; *C13 Nuclear Magnetic Resonance Database*, ^{13}C nmr spectra of organic compounds; *DIPPR Data Compilation of Pure Compound Properties*, 39 properties for more than 1000 chemical compounds; *Ei CHEMDISC*, chemical engineering; *Electronics Material Technology News*, hightech specialty chemicals and materials used in electronic products; *EMTOX*, toxicology; *Environmental Fate Data Bases*, fate of organic chemicals; *Epidemiology Information System (EIS)*, food contaminants and their effects on human health; *European Chemical News (ECN)*, European chemical industry; *European Directory of Agrochemical Products; FDA Drug Bulletin; FOODS ADLIBRA*, the food industry; *General Science Index; Gmelin Formula Index (GFI)*, inorganic and organometallic chemistry; *HODOC*, organic compounds and spectral data; *Infrared Search System (IRSS); Infrared Spectral Database*, infrared spectra of organic compounds; *Inorganic Crystal Structure Data Base (ICSD)*, alternatively called *Gmelin/FIZ Inorganic Crystal Structure Data Base; Japan Technology*, science and technology; *Japanese Information on Scientific and Technical Topics (JAPINFO); JICST File on Science and Technology*, international scientific and technological literature; *JICST File on Science, Technology and Medicine in Japan; Kirk-Othmer Encyclopedia of Chemical Technology Online; Log P Database*, measured and calculated partition coefficients for organic compounds; *Marine Environmental Data Information (MEDI)*, oceanographical observations; *Microbiology Abstracts, Section A: Industrial and Applied Microbiology; Microbiology Abstracts, Section C: Algology, Mycology and Protozoology; National Union Catalog Codes*, libraries cited in the *Chemical Abstracts* Service Source Index; *NIST Crystal Data File*, alternatively called *Cristaldon*, formerly called NBS Crystal Data Identification File; *ORBCHEM*, chemical nomenclature; *PAPERCHEM*, scientific and technical aspects of the pulp and paper industries; *PASCAL*, alternatively called, *Programme Applique a la Selection et a la Compilation Automatiques de la Litterature* (PASCAL), science and technology; *Pest Control Literature Documentation (PESTDOC)*, formerly called Pesticidal Literature Documentation; *Pharmaceutical and Healthcare Industries News Database (PHIND); Physical Property Data Service (PPDS); PHYTOTOX*, alternatively called Plant Toxicity Data; *Plant Growth Regulator Abstracts; Pollution Abstracts; Radiation Chemistry Data Center Database; Registry of Mass Spectral Data; Review of Agricultural Entomology*, formerly called Review of Applied Entomology, Series A: Agricultural; *Review of Medical and Veterinary Mycology; SCISCAN*, natural, physical, earth, environmental, biomedical, and life sciences; *SciSearch*, natural, physical, earth, environmental, biomedical, and life sciences; *Seed Abstracts; Standard Pesticide File (SPF); Structure and Nomenclature Search System (SANSS)*, chemical substances, including compounds, covered by databases made available online through CIS; *The Chemical Monitor*, chemical instrumentation; *THERMALLOY*, thermodynamic properties of metallic alloys; *THERMODOC*, thermodynamic properties of inorganic materials; *THERMOCOMP*, thermodynamic properties of inorganic elements and compounds, covering enthalpy of formation, entropy, specific heat, and other details; *TRC Vapor Pressure Datafile*, alternatively called *TRC Thermophysical Property Datafile 1: Vapor Pressure; Who's Who in Technology*, and *World Patents Index (WPI)*.

4.3. Biochemistry and Biophysics

An alphabetical listing of biochemistry and biophysics databases (8) available as of 1992 follows: *Biochemistry Abstracts, Part 1: Biological Membranes*, formerly called Biological Membranes Abstracts; *Biochemistry Abstracts, Part 2: Nucleic Acids*, formerly called Nucleic Acid Abstracts; *Biochemistry Abstracts, Part 3: Amino*

Acids, Peptides, and Proteins, formerly called Amino Acids, Peptides, and Protein Abstracts; *BioCommerce Abstracts and Directory; Biological and Agricultural Index, BIOSIS Previews*, life sciences dealing with animals (including humans), plants, and microorganisms; *Chemical Abstracts' (CA) File; CA Registry File; CA Search*, formed through the merger of two previous files, CA Condensates (CACon) and CA Subject Index Alert (CASIA); *Calcified Tissue Abstracts*, all aspects of calcium and related mineral metabolism; *CAOLD*, all areas of chemistry and chemical engineering; *CApreviews*, all areas of chemistry and chemical engineering; *CASREACT*, chemical catalysts, products, reactants, reagents, and solvents; *Chemical Journals of John Wiley & Sons (CJWILEY)*, polymer and bipolymer science; *Chemical Journals of the American Chemical Society (CJACS); Chemical Journals of the Royal Society of Chemistry (CJRSC); Chemoreception Abstracts*, the sciences of taste, smell, and related phenomena; *Conference Papers Index (CPI)*, conference papers in science and technology; *CSA Life Sciences Collection*, formerly called IRL Life Sciences Collection; *Current Awareness in Biological Sciences (CABS); Current Biotechnology Abstracts (CBA); Current Contents Search*, alternatively called *CC Search; EMBASE plus*, alternatively named *Excerpta Medica*, biomedicine, human medicine, and related disciplines; *INSPEC*, formerly called Information Services for the Physics and Engineering Communities; *JICST File on Science, Technology, and Medicine in Japan; Log P Database*, measured and calculated partition coefficients for organic compounds; *Microbiology Abstracts, Section B: Bacteriology; Nutrition Abstracts and Reviews, Series B: Livestock Feeds and Feeding; Physics Abstracts (PA); PHYTOTOX*, alternative name: *Plant Toxicity Data*; and *Who's Who in Technology*.

4.4. Geochemistry and Mineralogy

An alphabetical listing of geochemistry and mineralogy databases (8) available as of 1992 follows: *American Gem Market System (AGMS)*, the gem and jewelry industry; *Applied Science and Technology Index; Aquatic Sciences and Fisheries Abstracts (ASFA); Australian Earth Sciences Information System (AESIS); Chemical Abstracts' (CA) Registry File; Conference Papers Index (CPI)*, conference papers in science and technology; *Current Contents Search*, alternatively called *CC Search; Examine*, the earth sciences; *General Science Index; GeoArchive; Geobanque*, formerly called Banque de Donnees du Soussol; *GEOBASE*, formerly called GEOABS; *Geo Abstracts; GEOLINE*, the geosciences; *Geological Reference File (GeoRef); GEOPAC*, Australian earth sciences; *GEOS*, geosciences; *Geoscience Data Index for Alberta (GEODIAL)*, all aspects of Alberta Geology; *IMMAGE*, economic and exploration geology, mining engineering, extraction geology; *International Research and Evaluation-Information and Technology Transfer Database (IRE-ITTD)*, all aspects of science and technology; *JICST File on Science and Technology*, international scientific and technological literature covering such topics as Japanese and foreign chemistry and chemical industries; *JICST File on Science, Technology, and Medicine in Japan*, Japanese scientific and technological literature covering such topics as the chemical industry; *MARINELINE*, marine research and technology; *McGraw-Hill CD-ROM Science and Technical Reference Set*, science and technology, including physical, earth, and life sciences, and engineering; *Michigan Natural Features Inventory Program (MNFI)*, special animals and plants, natural ecological communities, and geological and other special features of Michigan's natural heritage; *Oceanic Abstracts (OA); PASCAL-GEODE*, alternatively called *Geode*, earth sciences; *Petroleum Abstracts*, alternative name: *TULSA Data Base*, petroleum exploration, production, and development; *Publications of the U.S. Geological Survey*, earth sciences; *Rock Analysis Storage System (RASS)*, field geochemistry and petrology; *SCISCAN*, natural, physical, earth, environmental, biomedical, and life sciences; *SciSearch*, natural, physical, earth, environmental, biomedical, and life sciences; *Sea Grant Network (SGNET)*, marine science; *Soviet Science and Technology (SST); Stimline*, formerly part of Geoline, industrial minerals and mineral resources; *Who's Who in Technology*; and *Yukon Bibliography (YKB)*.

4.5. Biology and Medicine

An alphabetical listing of biology and medicine databases (8) available as of 1992 follows: *Advanced Medical Information Services*, Japanese health and medical industry; *AgBiotech News and Information; Agrar Forschungsvorhaben*, agricultural research projects; *AGRICOLA*, alternative name: *Agricultural Online Access*, formerly called Cataloging and Indexing (CAIN); *Agricultural Library Forum (ALF)*, all aspects of agricultural Sciences; *AIDSLINE*, aspects of Acquired Immune Deficiency Syndrome (AIDS); *Allied and Alternative Medicine; Animal Breeding Abstracts; Animal Disease Occurrence; Aquaria and Fish Forum; Aquatic Information Retrieval (AQUIRE); Aquatic Sciences and Fisheries Abstracts (ASFA); Arzte Zeitung Datenbank*, medicine and health-related sciences; *Australian Marine Research in Progress; Avline*, alternative name: *Audiovisuals Online*, audiovisual material in clinical medicine; *BioBusiness; BioExpress; Biological and Agricultural Index; Biology Digest; BIOSIS Previews; BMA Press Cuttings Database (BMAP)*, medical news and related ethical and sociological issues; *CAB Abstracts*, agricultural science; *CAT-LINE*, alternative name: *Catalog Online*, books and serials in the biomedical sciences; *Chemical Hazards Response Information System (CHRIS)*, transport of hazardous chemicals; *CISTI Monographs*, formerly called CISTI Current Catalogue; *CONF.*, science technology, engineering, medicine, and health sciences; *CISTI Serials*, serials in all areas of science, technology, and medicine; *Colleague Mail*, formerly called MEDLINK, medical and health care topics; *Collective Catalogue of Belgium (CCB); Company Directory Database*, formerly called Pharmacontacts, pharmaceutical, agrochemicals, and animal health organizations; *Comprehensive Core Medical Library (CCML)*, formerly called Critical Care Medicine Library; *Conference Papers Index (CPI)*, conference papers in science and technology; *CSA Life Sciences Collection*, formerly called IRL Life Sciences Collection; *Current Awareness in Biological Sciences (CABS); Current Contents Search*, alternative name: *CC Search; DHSS-MEDTEH*, alternative name: *Medical Toxicology and Environmental Health; DIGS*, alternative name: *Domestic Information on the General Subjects, Korean Periodicals Index; Directory of Federally Supported Research in Canadian Universities*, formerly named Information Exchange Centre for Federally Supported Research in Universities, federally supported university research in Canada; *DIRLINE*, alternative name: *Directory of Information Resources Online*, information on health and biomedical organizations: *EMBASE plus*, alternative name: *Excerpta Medica*, biomedicine, human medicine, and related disciplines; *Emergindex System*, emergency and critical care medicine; *EMFORENSIC*, forensic science; *EMHEALTH*, public health, social medicine, and hygiene; *Excerpta Medica CD: Cardiology; Excerpta Medica CD: Drugs and Pharmacology; Excerpta Medica CD: Gastroenterology; Excerpta Medica CD: Immunology and AIDS; Excerpta Medica CD: Neurosciences; Excerpta Medica Vocabulary (EVOC); ExpertNet*, medical malpractice and personal injury expert witnesses; *Forensic Science Database (FORS); Forthcoming Events*, meetings, seminars, workshops, and special events in the life sciences; *General Practitioner*, general practice medicine; *General Science Index; Health Periodicals Database; Helminthological Abstracts*; former name: Helminthological Abstracts, Series A: Animal and Human Helminthology; *Index Veterinarius; Indice Medico Espanol (IME)*, alternative name: *Spanish Medical Index*, clinical and experimental medicine; *Information System for Hazardous Organics in Water (ISHOW); International Information System for the Agricultural Sciences and Technology (AGRIS); International Medical Tribune Syndicate; International Research and Evaluation-Information and Technology Transfer Database (IRE-ITTD); Japanese Information on Scientific and Technical Topics (JAPINFO); JICST File on Medical Science in Japan; JICST File on Science and Technology; JICST File on Science, Technology, and Medicine in Japan; Journal Watch; LEXIS Medical Malpractice Library; Maggie Mae's PET-NET and Co.*, animals and pets, animal health care, animal activities, animal preservation; *Marine Biotechnology Abstracts; Marine Environmental Data Information (MEDI)*, oceanographical observations; *McGraw-Hill Publications Online*, former name: McGraw-Hill Business Backgrounder; *MEDIC*, Finnish medical literature; *Medical and Psychological Previews (PREV); Medical Subject Headings Vocabulary File*, alternative name: MeSH Vocabulary File, medical vocabulary thesaurus terms; *MEDIS*, medicine; *MEDLARS Name Authority File*, personal names, corporate names, and classification decisions; *MEDLINE*, alternative name: *MEDLARS Online; NIOSH Technical Information Center Database (NIOSHTIC)*, all aspects of

occupational safety and health; *Nordisk Samkatalog for Seriella Medicinska Publikationer (Nordser)*, biomedical journals available in the Nordic countries; *NCR Publications*, National Research Council of Canada publications; *Nursing and Allied Health Database; Oceanic Abstracts (OA); Oceanographic Literature Review; PASCAL*, alternatively called *Programme Applique a la Selection et a la Compilation Automatiques de la Litterature*, science and technology; *Permanent Inventory of Agricultural Research Projects in the European Community (AGREP); Pharmaceutical and Healthcare Industries News Database (PHIND); Pig News and Information; Plantas Medicinales (PLAMED)*, alternative name: *Herbal Remedies; Postgraduate Medicine*, general medicine; *Protozoological Abstracts; PTS Newsletter Database; Readers' Guide Abstracts*, topics of general interest; *Readers' Guide to Periodical Literature; Review of Medical and Veterinary Entomology*, formerly called Review of Applied Entomology, Series B: Medical and Veterinary; *Review of Medical and Veterinary Mycology; Right-To-Know Planning Report*, right-to-know rules, regulations, and policies; *Scientific American*, applied physical, life, and social sciences; *Scientific American Medicine (SAM)*, current developments in the 15 subspecialties of clinical medicine;*SCISCAN*, natural, physical, earth, environmental, biomedical, and life sciences; *SciSearch*, natural, physical, earth, environmental, biomedical, and life sciences; *Sea Grant Network (SGNET)*, marine science; *SEIBT*, German industrial companies; *SERLINE*, alternative name: *Serials Online*; biomedical serials; *Small Animals*, former name: Small Animal Abstracts; *Social Sciences Index; SOMED*, alternative name: *Sozialmedizin; Sportwissenschaftliche Forschungsprojekte (SPOFOR)*, research projects involving sports, including physical education; *Swedish Drug Information System (SWEDIS)*, drugs available in Sweden; *Swemed*, all areas of medicine; *The Medical Letter on Drugs and Therapeutics; The Medical RoundTable*, medical and health topics; *The New England Journal of Medicine*, all areas of medicine; *The Physician and Sportsmedicine*, sportsmedicine; *Union List of Scientific Serials in Canadian Libraries; Veterinary Bulletin; Veterinary Literature Documentation (VETDOC); Who's Who in Technology*; and *Zoological Record Online*, alternative name: *ZR Online*.

4.6. Engineering, Mathematics, and Physics

An alphabetic listing of engineering, mathematics, and physics databases (8) available as of 1992 follows: *AgBiotech News and Information*, agricultural biotechnology; *Agrar Forschungvorhaben*, agricultural research projects; *AGRICOLA*, alternative name: *Agricultural Online Access*, formerly called Cataloging and Indexing (CAIN); *Agricultural Engineering Abstracts; Agricultural Library Forum (ALF); Agriculture Victoria-Library Catalogue (AVID); Agroforestry Abstracts; Applied Science and Technology Index; Asian Geotechnology Engineering Database (AGE)*, alternative name: *AGE Database*, geotechnical engineering; *Australian Engineering Database (ENGINE)*, Australian engineering literature; *Australian Marine Research in Progress*, Australian research projects in marine sciences; *Automotive Information and News Service*, automotive industry in Western Europe, the United States, and Japan; *Banque de Donnees Internationales de Biometrie Humaine et d'Ergonomie (ERGODATA)*, alternative name: *International Data Base of Human Biometry and Ergonomics; BEFO*, managerial aspects of engineering; *BIIPAM-CTIF Data Base*, alternative name: *Banque de L'Information Industrielle Pont-a-Mousson*, metallurgy, foundry techniques, the iron industry, corrosion, coatings, materials resistance; *Biological and Agricultural Index; BNA Daily News; BODIL*, building and housing; *Business Periodicals Index; C-CORE Database*, cold ocean engineering; *Chemical Abstracts (CA) FILE; Ca Search*, formed through the merger of two previous files, CA Condensates (CACon) and CA Subject Index Alert (CASIA); *CAOLD*, all areas of chemistry and chemical engineering; *CApreviews*, all areas of chemistry and chemical engineering; *CASE Strategies*, computer-aided systems engineering; *CERCLIS Database of Hazardous Waste Sites; CETIM Database*, mechanical engineering industry; *Chemical Engineering*, chemical process industries; *Chemical Engineering and Biotechnology Abstracts (CEBA)*, plant and process chemical engineering, covering both theoretical and practical aspects; *Chemical Journals of the American Chemical Society (CJACS); Chemical Journals of the Royal Society of Chemistry (CJRSC); Chemical Safety NewsBase (CSNB)*, health and safety in chemical and allied industries; *Chemical Week*, chemical process industry; *Chickpeas*

and Pigeonpeas, chickpeas and pigeonpeas, plant physiology, nitrogen fixation, storage and quality, nutrition and utilization, handling and processing, and economics; *CIS Abstracts*, alternative name: *CISILO*, occupational health and safety; *Civil Engineering DataBase (CEDB); CMP Publications Electronics File*, electronic engineering design, industry, and purchasing news; *Cold Regions Data Base*, all subjects relating to Antarctica, the Arctic, and subantarctic islands; *COMPENDEX*, alternative name: *Computerized Engineering Index*, all fields of engineering; *COMPENDEX PLUS*, all fields of engineering; *Computer and Mathematics Search; Computer and Information Systems Abstracts*, computer science in the broadest sense; *Conference Papers Index (CPI)*, conference papers in science and technology; *Conferences in Energy, Physics, and Mathematics; Cross Section Information Storage and Retrieval System (CSISRS)*, neutron, photon, and charged particle cross sections; *CSA Engineering; Current Contents Search*, alternative name: *CC Search; Current Research in Britain; Current Technology Index (CTI)*, former name: British Technology Index (BTI); *Dairy Science Abstracts; DECHEMA Environmental Technology Equipment Databank (DETEQ)*, manufacturers and suppliers of plants, apparatus, equipment, and machinery; *DECHEMA Research Institutes Databank (DERES)*, research and teaching establishments active in chemical engineering and biotechnology; *DECHEMA Thermophysical Property Data Bank (DETHERM); DESY-HEPI*, alternative name: *German Information System for High Energy Physics; DIGS*, alternative name: *Domestic Information on the General Subjects, Korean Periodicals Index; DMS/FI Contractors*, U.S. and international defense/aerospace programs actively monitored in the DMS Market Intelligence Reports services; *DMS/FI Market Intelligence Reports*, former name: DMS Online, U.S. and world defense and aerospace markets; *Dokumentation Kraftfahrwesen Database (DKF)*, motor vehicle design, construction, and manufacturing; *Dokumentation Maschinenbau Database (DOMA)*, alternative name: *Literaturdatenbank Maschinenbau*, mechanical engineering; *DTIC Manpower and Training Research Information System (MATRIS); Ei CHEMDISC*, chemical engineering; *Ei ENGINEERING MEETINGS*, all fields of engineering; *Ei Page One*, engineering literature; *Electrical and Electronics Abstracts (EEA)*, all areas of electronics; *Electronic Engineering Times*, news and analysis of, as well as job openings in, the electronics industry; *Electronics and Communications Abstracts; ENERGIE*, formerly called Data Compilations in Energy (ECOMP), energy research and technology literature on fossil fuels; *ENERGIRAP*, alternative name: *ENERGI*, high energy and nuclear physics; *ENGINEERING AND INDUSTRIAL SOFTWARE DIRECTORY (EISD); ENR: Engineering News-Record*, engineering and construction topics; *Environmental Fate (ENVIROFATE)*, fate or behavior of chemicals which are released into the environment; *FLUIDEX*, fluid engineering; *Fusion Power Report (FPR)*, fusion energy; *Gaz-Physique-Orsay Database (GAPHYOR)*, properties of atoms and molecules and their interactions, and the macroscopic properties of gases and plasmas; *General Science Index; Geomechanics Abstracts; Government-Industry Data Exchange Program (GIDEP)*, former name: Interagency Data Exchange Program (IDEP), qualification and evaluation test data on parts, components, and materials from tests performed by industry and government activities; *Groundnuts; Highway Research Information Service (HRIS); IBSEDEX*, formerly called International Building Services Index, mechanical and electrical services associated with all types of buildings; *ICC Key Notes Market Research; ICONDA*, alternative name: *CIB International Construction Database*; IHS International Standards and Specifications; Industrial Environment; Information on Roads (INROADS), formerly called Australian Road Research Documentation (ARRD); *Innovator's Digest (ID)*, former name: Information for Innovators; *INSPEC*, former name: Information Services for the Physics and Engineering Communities; *International Nuclear Information System (INIS)*, peaceful applications of nuclear science and technology; *International Research and Evaluation-Information and Technology Transfer Database (IRE-ITTD)*, all aspects of science and technology; *International Road Research Documentation (IRRD); ISIS Software Infobank*, commercial, technical, and scientific applications software products available in Austria, Switzerland, and Germany; *ISMEC: Mechanical Engineering Abstracts*, former name: Information Service in Mechanical Engineering; *Japan High Tech Review*, Japanese high technology industries; *Japan Technology*, science and technology; *Japanese Information on Scientific and Technical Topics (JAPINFO)*, science and technology; *JICST File on Science and Technology*, international scientific and technological literature covering such topics as Japanese and foreign chemistry and chemical industries; *JICST File on Science,*

Technology, and Medicine in Japan; Kirk-Othmer Encyclopedia of Chemical Technology Online, chemical technology; *KSEA*, alternative name: *Korean Scientists and Engineers Abroad; LIDAS*, motor vehicles and automotive engineering; *Livres Bibliotheque Saclay Database (LIBISAC)*, books and conference proceedings pertaining to all aspects of nuclear energy and physics; *Marine Environmental Data Information (MEDI)*, oceanographical observations: *Mathematics Abstracts (MATH)*, former name: Mathematics and Related Subjects Data Base; *MathSci*, former name: MATHFILE; *McGraw-Hill CD-ROM Science and Technical Reference Set; Mechanical Engineering; MERLIN-TECH*, electrical and electronic engineering; *Military Robotics Sourcebook; Mobile Data Report*, mobile data communications industry, *MOVE, SAE Global Engineering Technology*, self-propelled vehicle technology; *MPD Network*, mechanical, chemical, corrosion, physical, electrical, and electrochemical properties of materials; *Navy News and Undersea Technology*, U.S. Navy contracts; *NNDC Addresses*, nuclear physics researchers; *NNDC Newsletter*, news and information of interest to the nuclear physics research community; *Nuclear Data (NUDAT); PASCAL*, alternative name: *Programme Applique a la Selection et a la Compilation Automatiques de la Litterature (PASCAL)*, science and technology; *Physical Property Data Service (PPDS); Physics Abstracts (PA); Physics Briefs (PB); Physics Codes (PHYSCO)*, physics codes for the calculation of physics quantities; *Pollution Abstracts; PRODIS*, the humanization of labor; *PsycFILE*, industrial and organizational psychology; *Publications of the Institute for Research in Construction (IRCPUBS); Raumordnung, Stadtebau, Wohnungswesen, Bauwesen (RSWB)*, regional planning, town planning, housing, building construction, and civil engineering; *Recent Advances in Manufacturing (RAM); REGLER*, alternative name: *REGISTER*, Swedish regulations and standards covering building, energy saving, environmental technology, physical planning, and urban technology; *RESAGRI*, agriculture; *Reuter TEXTLINE*, company and industry coverage; *ROADLINE*, former name: GEOROAD; roads, traffic, vehicles, road users, safety, and related topics; *SAE Global Mobility Database*, former name: Society of Automotive Engineers Abstracts; SAE Abstracts; *SCISCAN*, natural, physical, earth, environmental, biomedical, and life sciences; *SciSearch*, natural, physical, earth, environmental, biomedical, and life sciences; *Searchable Physics Information Notices (SPIN); SEBAN Data Base*, scientific research; *Solid State and Superconductivity Abstracts; Standards and Directories / Normes et Repertoires*, standards, directories, and publications covering occupational health and safety, electrical, mechanical, and mine safety, and environmental sciences; *Sugar Industry Abstracts; SVERKER*, professional senior engineers in Sweden offering expert advice on building and civil engineering; *System for Documentation and Information in Metallurgy (SDIM); TECHNO-SEARCH*, new products, research and development, and marketing trends in Japanese industry; *Tekniikan Aikakauslenti Indeksi (TALI)*, engineering, forest products, mining and metallurgy, architecture, chemistry, physics, mathematics, geology, information processing, industrial economics, energy, and information science; *TITLE-SEARCH*, alternative name: *Technical Report Title Hotline*, general engineering; *Transportation Research Information Service (TRIS)*, former name: TRIS-ONLINE, all aspects of transportation; *VDI-Nachrichten*, economic, scientific, and technical aspects of engineering; *Verfahrenstechnische Berichte (VtB)*, chemical engineering, process engineering, and related fields; *Wer Baut Maschinen*, alternative name: *Who Makes Machinery?; Wheat, Barley and Triticale Abstracts; Who's Who in Technology; World Patents Index (WPI)*; and *Zentralstelle Dokumentation Elektrotechnik Database (ZDE)*, alternative name: *Literaturdatenbank Elektrotechnik*, former name: Dokumentationsring Elektrotechnik (DRE).

4.7. Claims and Patents

An alphabetic listing of claims and patents databases (8) available as of 1992 follows: *APIPAT*, alternative name: *Index to API Abstracts / Patents*, former name: Index to Abstracts of Refining Patents, petroleum and energy industries worldwide; *BNA Daily News*, U.S. governmental and regulatory developments, policymaking, legislative activities, and legal issues; *BNA Patent, Trademark, and Copyright Daily*, U.S. patent, copyright, trademark, and unfair competition law developments; *BNA's Patent, Trademark, and Copyright Journal*, patent, trademark, and copyright law; *BREV*, all sectors of patentable activities in Belgium; *British Library Catalogue: Science Reference and Information Service*, all areas of science and technology, business and

industrial property, including patents, trademarks, and registered designs; *Canadian Patent Index; Canadian Patent Reporter (CPR)*, Canadian patent and copyright legal decisions; *Chinese Patent Abstracts in English Data Base; CIB*, international patent classifications; *CIBEPAT*, patents and utility models registered in Spain; *CLAIMS Compound Registry*, former name: Class Code, Assignee, Index, Method Search—Compound Registry, chemical compounds; *CLAIMS/CITATION*, U.S. and some foreign patents in all subject areas; *CLAIMS/CLASS*, former name: Class Code, Assignee, Index, Method Search—Classification; CLAIMS/Reference, U.S. patent classification and authority data; *CLAIMS/Comprehensive Data Base*, U.S. patents in the fields of chemistry and engineering; *CLAIMS/Reassignment & Reexamination*, patent reassignments and reexaminations; *CLAIMS/U.S. Patent Abstracts*, alternative name: *CLAIMS Biblio/Abstracts*, former name: Class Code, Assignee, Index, Method Search—General, Electrical, Mechanical and Chemical; *CLAIMS/UNITERM*, U.S. patents in the fields of chemistry and engineering; *CLINPAT*, patent classifications; *Current Patents Evaluation*, patents covering cardiovascular, central nervous system, and antimicrobial therapies; *Current Patents Fast-Alert*, pharmaceutical patents; *Database on Legal Precedents Regarding Intellectual Property Rights; Deutsche Patent Datenbank (PATDPA)*, German patents and utility models; *ECLATX*, former name: INPI-4, the International Patent Classification scheme; *EDOC*, former name: INPI-3, European patents; *EPAT*, alternative name: *European Patent Register*, former name: INPI-2, European patents; *FPAT*, former name: INPI-1; INPI BREVETS, French patents; *IMSWorld Online Service*, the international pharmaceutical industry; *INPADOC Data Base (IDB)*, alternative name: *Patent Family Service/Patent Register Service (PFS/PRS)*, patents issued worldwide, including patent families and legal status; *International Economic Law Documents; ITALPAT*, Italian patent and model applications; *Japio*, Japanese patent, utility model, design, trademark, etc; *JURINPI*, French legal decisions related to patents and trademarks; *KPTN*, alternative name: *Korean Patents; KUMO*, alternative name: *Korean Utility Model*, Korean utility model specifications; *LEXIS Federal Patent, Trademark, and Copyright Library*, U.S. patent, trademark, and copyright law; *LEXPAT*, U.S. patents in all subject areas; *LitAlert*, U.S. patent and trademark litigation; *ORBPAT*, patents databases available online through the ORBIT Search Service; *PAPERCHEM*, scientific and technical aspects of the pulp and paper industries; *PATDATA*, U.S. patents in all fields of medicine, science, and engineering technology; *Patent Status File*, U.S. patent status changes; *PATGRAPH*, chemical formulas derived from patents; *PATOS European Legal Status and Alterations*, European patents and patent applications; *PATOS European Patent Applications; PATOS European Patents; PATOS German Patent Applications and Utility Models; PATOS German Patents; PATOS PCT Applications*, international patent applications; *PD-basen*, alternative name: *Patentdirektoratsbasen*, Danish patents, trademarks, and designs, including pending applications; *PHARMSEARCH*, pharmaceutical patent information published in France, the United States, and by the European Patent Office (EPO); *SITADEX*, patents, trademarks, and designs registered in Spain; *SITADIN*, new law patents and utility models registered in Spain, including European patents designating Spain; *TRANSIN*, technology transfer, patents, new products and inventions, industrial know-how; *U.S. Patents; USCLASS*, alternative name: *U.S. Classifications*, U.S. patents in any subject area; *WESTLAW Intellectual Property Library*, former name: WESTLAW Copyright, Patent and Trademark Library, U.S. intellectual property law, covering copyrights, patents, and trademarks; *WESTLAW Texts and Periodicals Library; World Patents Index (WPI)*; and *WPI/APIPAT*, petroleum and energy industries worldwide.

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MARTHA E. WILLIAMS
University of Illinois
JAMES L. GRANT
DIALOG Information Services, Inc.

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