Sources of Japanese Electronic Information

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FORMAT AND HARDWARE

Information in Japan is increasingly available in electronic form. Although on-line databases and CD-ROM products are apparently not as widespread in Japanese libraries as they are in the United States or Canada, their acceptance is growing rapidly as more individuals and organizations become interested in this new media. In this introductory article the authors will explore some of the major classes of Japanese electronic information in the humanities and social sciences and the formats in which they are available. We use the term "electronic information" to encompass such entities as books, periodicals, directories, recordings, photo archives, library catalogs, and on-line bulletin boards. Such collections of information may or may not have appeared previously in a printed form.

In Japan, electronic information is readily available in four formats: on-line, CD-ROM, electronic book, and magnetic tape. Although magnetic tapes for mainframe computers are used quite often, we will not discuss this format here.

On-line databases can be accessed by direct telephone connection to the producer, through an enhanced service provider (ESP), or a network operated by a university or educational consortium.

In the case of a direct connection, a user must contact the producer and obtain an account and password. The database can then be accessed by placing a call to a telephone number specified by the producer. It would be necessary to pay for the telephone call, connect time, and possibly for searching and/or downloading information. An example of a database available in this manner is one offered by the Japan National Institute for Educational Research. It contains over 3,000 citations and abstracts relating to research in the applied sciences and can be accessed only through the Institute on a subscription basis.

Although the direct access method will be encountered from time to time, it is far more common for a database to be offered through an enhanced service provider of one kind or another. An ESP is an organization which provides access through its own computer facilities to a number of different sources of electronic information. Generally speaking, there are two kinds of enhanced service providers. One type, which is usually called an on-line database service, provides database access principally to organizations rather than to personal users. Dialog Information Services, Dow Jones News/Retrieval, and Mead Data Central's Nexis service with their access to newspapers, serials, and directories are examples of on-line database services. One such organization in Japan is the Heiwa Information
Service. The other type of ESP is often referred to as an on-line information service. Typified by CompuServ and Prodigy, the on-line information service provides both individuals and organizations with access to databases plus electronic bulletin boards, forums, list servers, and an E-mail system. In Japan, Nifty-Serve is one of the most well-known on-line information services. It provides access to newspaper, periodical, directory, and entertainment information databases in addition to bulletin boards and an E-mail system.

CD-ROM applications are also growing in popularity along with the development of multimedia personal computers in Japan. NEC introduced the PC-9821, multimedia personal computer (pc) last October. It is available in two configurations. The higher-end model, a 486 machine called the S-2, features an internal CD-ROM drive, 40 megabyte hard disk, stereo sound capability, and preinstalled MS-DOS (version 5.0), and Japanese MS-Windows. It lists for ¥438,000 (US$3,875.00). Another multimedia pc, Toshiba’s new FM Towns model HR200, has a 486 CPU, 4 MB RAM, two floppy disk drives, an internal CD-ROM drive, and a 200 MG hard disk. It lists for ¥468,000 (US$4,142.00) and comes with preinstalled software and supports the Window MME standard.

Separate CD-ROM drives for Japanese personal computers are still offered by a wide range of manufacturers. CD-ROM drives for the NEC 9800 series range from ¥68,000-120,000 (US$600.00-1,060.00). Tekuseru Company makes a CD-ROM drive (model DM-5024) which works with the PC-9800 series, IBM PC/AT, and Macintosh computers for ¥96,000 (US$850.00). One of Apple’s newest CD-ROM drives for the Macintosh, model CD-300, lists for ¥148,000 (US$1,310.00).

Stand-alone CD-ROM viewers are an alternative to the pc/CD-ROM configuration. Panasonic’s model KV-M101 CD-ROM viewer is a self-contained CD-ROM player with monochrome display, keyboard, and one 3.5-inch floppy disk drive. It measures about 20 inches long by 6 inches deep, making it about the size of a "boom box." The KV-M101 can be connected to a printer and it is possible to download information from the CD-ROM to the viewer’s built-in word processor. Unfortunately, this machine is presently capable of running only four CD-ROM packages. Product literature promises the ability to run "most popular CD-ROM applications" in the near future. This viewer lists for around ¥260,000 (US$2,300.00).

The advent of the multimedia pc has eliminated many of the complexities of installing CD-ROM drives and software and will contribute to the acceptance of this new media in Japan.
business information. There is very little question that librarians in Japan will be looking more closely at CD-ROM products as a solution to space and preservation problems as reliability and ease of use continue to grow.

The emergence of the electronic book (denshi-bukku) represents a very interesting development in publishing and information delivery. Although this technology is directed primarily toward the consumer market and is probably of little practical use in the library setting, it is still worthwhile for us to be aware of this important new information medium.

An electronic book is essentially any piece of information that can be read on a computer or hand-held reader. It typically comes in the form of a compact disk but could easily be on a floppy disk or directly on-line. In popular usage, however, the term "electronic book" refers to a small-sized compact disk (8 cm.) intended for use on a portable device such as the Sony Data Discman. This is in contrast to a full-sized CD-ROM disk which is 12 cm. in diameter and requires a standard CD-ROM drive/pc configuration or a small reader such as Sony's PIX 100 multimedia CD-ROM player. In Japan, the term "CD-ROM-ban" (CD-ROM edition) refers to a 12 cm. disk. A "denshi-bukku-ban" (electronic book edition) indicates a small 8 cm. disk for the Sony Data Discman and similar hand-held readers.

The most widely known reader for electronic books is the Sony Data Discman which is also marketed in North America. It has a starting price in the United States of $250.00 to $300.00. Sanyo, Panasonic, and other companies also market electronic book readers in Japan. Japanese electronic books and readers exist in three versions designated as EB, EBG, and EBXA. EB indicates a machine that will display text and graphics and can be used only with electronic books made for the Japanese domestic market. EBG is for text and graphics, but is intended for use with electronic books produced for markets outside Japan. EBXA designates readers capable of reproducing text, graphics, and sound from disks manufactured for any market in the world. As the market grows and prices come down, the EB and EBG models will gradually disappear but, in the meantime, it is necessary to make sure that disks and readers match. For example, electronic books from the States will not display on the Data Discman model DD-1 which is an EB machine.

The electronic book format has several advantages over the full-sized CD-ROM option. Foremost has been the lower price of hardware and software, although this is slowly becoming less of an issue for some people as the price of CD-ROM drives continues to decline. The convenient size and portable nature of the small readers has always been another plus for this medium. Consumers also like the wide range of popular titles available in electronic book format at a price which is generally lower than that of a full-sized CD-ROM. The market for electronic books in Japan is quite strong. The case appears to be different in the U.S. where full-sized CD-ROM drives costing as little as $200.00 tend to make an investment in the Data Discman less attractive.

The Sony Data Discman has a small screen and keyboard with cursor and function keys. The screen is small and not particularly pleasant to read. The keypad is also rather small.
and users must be careful to press the correct keys since it is easy to hit two keys at the same time. A small thermal printer is available for the Discman and lists at approximately ¥25,000 (US$220.00). The Data Discman can be connected to any television set which has a video jack thereby making a larger screen available. Users who wish to read electronic books directly on their pc can purchase an electronic book drive from Sony (model DD-DR1) for ¥48,000 (US$425.00) which connects to the NEC 9800 series of personal computers. This eliminates problems with the Discman's small screen and keyboard. It also allows users to download certain types of data to their pc and to use regular Japanese printers. Search software, called Quick Viewer-Mac, which enables the Sony electronic book drive to function with a Macintosh is available from HAL Kenkyūjo in Tokyo for ¥18,000 (US$160.00). Search software is also available for the IBM 5500 series and IBM 55Z AX computers for ¥15,000 (US$132.00).

It is technically possible to display Japanese electronic books on an American IBM pc or compatible using a standard CD-ROM drive such as Hitachi's CDR-1503S. This can be accomplished with software called ReadBook under development by Mr. Mark Edwards, who wrote MOKE the popular Japanese word processor. One of the authors of this article used a beta test version of the ReadBook software to view the electronic book edition of the Kōjien on an IBM compatible pc. It worked quite well. Although the software interface is intended for students and independent researchers, it could conceivably have a place at the reference desk or in a bibliographer's office. Development of this kind of software interface is time-consuming since each electronic book title must be individually tested to assure that it will display properly and that all the search functions are operable. The next enhancements to ReadBook will be for the Windows environment, according to Mr. Edwards.

The electronic book market in Japan has grown extensively in the last few years and bookstores are devoting relatively large amounts of floor space to this new medium. The Japan Electronic Publishing Association sponsored the First International Electronic Publishing Exhibition last June in Tokyo. In this country, the Electronic Book Publishing Committee of the United States is working with publishers and computer makers to develop the international market for electronic books.

INFORMATION SOURCES AND DATABASES

On-line sources offer the most up-to-date information and they are generally the most expensive to use. CD-ROM packages can be used without ongoing charges for connect time and data retrieved, but lack currency. Both formats have distinct advantages and disadvantages.

The following summaries of selected databases represent an attempt to bring together some fundamental information on the major sources of electronic information currently available in Japan. We emphasize that this is not a complete listing of titles available. We have selected titles which we feel are of most interest to Japanese studies librarians in the
humanities and social sciences. For this reason we have not included the many titles devoted primarily to business, science, and technology. We have supplied the names of some information service providers for each title described. Once again, this is not a complete listing and we have included the providers that we are aware of so that readers might have an idea of the number of suppliers currently available. Some information given below, especially regarding fees and statistics, may be dated and no longer accurate. Translated titles of databases have been supplied by the authors.

NEWSPAPERS AND NEWS SERVICES

Newspaper databases are available in both on-line and CD-ROM forms. The following list includes individual newspaper databases, wire services, and combined database collections offered by enhanced service providers. It is important to understand that "full text database" does not mean that the entire newspaper is on-line or on CD-ROM but, rather, that the complete text of articles selected is available in electronic form. The distinction here is between abstracts or summaries and the entire text of an article. It should be noted that the text of newspaper articles copyrighted by individuals does not appear in the on-line databases unless the copyright holder has granted advance permission. In most cases, only a citation to the title of the article is available.

It is also important to be aware that all newspaper databases are not created equal. There are often several versions of the same newspaper databases offered by different service providers. Although the name of the database may be identical, the scope, period of inclusion, currency, and number of articles included can vary depending on which organization make the data available. Copyright issues must also be considered when using databases provided by a second or third party vendor. For example, articles copyrighted by the publisher of the Nihon keizai shinbun will appear on-line in the Nikkei News Telecom database which is owned by the Nihon keizai shinbun, but may not be available in the on-line version of the same newspaper offered by the G-Search service. In fact, several database providers advise users to consult the shukusatsuban (reduced size printed edition) for copyrighted articles.

Asahi shinbun kiji sakuin dētabēsu (HIASK)

The HIASK database is also available on CD-ROM. A collection of seven disks covering 1985 through 1991 (including a cumulative index) is ¥680,000 (US$6,017.00).

Asahi shinbun nyūsu sokuho (Asahi Shinbun News Wire)

Full text of releases sent out on the Asahi news wire.

Asahi Evening News and the English version of the news wire, Asahi Shinbun Online News, are also available through Nifty-Serve.

Chūnichi shinbun kiji dētabēsu (ACE Chunichi)

Includes the full text of the morning and evening editions of this regional newspaper.

Jiji tsūshin nyūsu

Full text of the Jiji Press service newswire.

Kumamoto nichō nichō shinbun kiji dētabēsu

Kyōdo rendō dētabēsu (Kyodo Linked Database)

Offers the complete text of news items from the Kyodo Press Center and associated companies as well as articles from the Kumamoto nichō nichō shinbun, Shizuoka shinbun, and Nishi Nihon shinbun. Includes articles which may not have been printed in the newspapers.
Kyōdo nyūsu sokuhō (Kyodo News Express)

Abridged and selected text of news releases from the Kyodo Press Center.

On-line Service: G-Search, Nifty-Serve
Updated: Daily

Kyodo News Wire

Complete text of news releases from the Kyodo Press Center.

On-line Service: G-Search, Nifty-Serve
Updated: Daily

Mainichi shinbun kiji dētabēsu (Mainichi Newspaper Article Database)

Contains full text of news articles from the morning and evening editions of the Tokyo Mainichi shinbun.

On-line Service: G-Search, Nifty-Serve, Nikkei Telecom
Inclusion: 1987-
Updated: Daily

Mainichi onrain nyūsu (Mainichi Online News)

Full text of news articles in the morning and evening editions of the Mainichi shinbun made available on-line before the papers are distributed to news dealers and subscribers. Articles which may later be withdrawn and not printed are included in this on-line service.

On-line Service: Nifty-Serve
Updated: Daily

Mainichi onrain nyūsu essensu

Provides the text of headlines from news articles in the Mainichi shinbun.

On-line Service: Nifty-Serve
Updated: Daily

Mainichi chihō nyūsu (Mainichi Local News)

Full text of local news articles from the Mainichi shinbun.

On-line Service: Nifty-Serve
Mainichi nyūsu ririsu (Mainichi News Release)

Complete text of news and public relations releases distributed to the press clubs of Tokyo by Japanese companies, government offices, and private organizations.

On-line Service: G-Search, Nifty-Serve
Inclusion: 1988-
Updated: Daily

MAIHIT (Mainichi Photograph Database)

This database serves as an index to the photo archives of the Mainichi Newspaper. It features keyword searching of the titles, captions, and subjects of over 80,000 photographs dating from the Meiji period to the present time which have appeared in Mainichi publications. This photo archive draws on the original negatives of the Mainichi Shinbun Jōhō Chōsabu (Mainichi Newspaper Office of Research and Information) which was founded in 1918. Particularly noteworthy is the fact that this collection was preserved during the Second World War and was exempted from military orders to destroy photographs for security purposes. The database also includes over 80,000 color photographs of international scope from the collection of the Japan Photo Research Center stored on laser disks. There are currently over 225,000 photographs available through the MAIHIT database. Users can receive fax copies of photographs for ¥380 (US$3.35) a piece. Actual copies are available on request.

On-line Service: Nifty-Serve
Updated: Daily

Mainichi nyūsu sokuhō (Mainichi News Express)

Major articles for the morning and evening editions of the Mainichi shinbun are placed on-line as soon as available. Articles for the morning edition appear between 6:00-10:00 p.m. of the previous day. Articles for the evening edition are on-line between 10:00 a.m.-2:00 p.m. of the same day.

On-line Service: Nifty-Serve, Nikkei Telecom
Updated: Daily

Mainichi shinbun kiji jōhō (Mainichi News Article Data)

Full text of major articles concerning politics, economics, international news, and cultural events appearing in the Mainichi shinbun. Articles with biographical data are emphasized.
Minami Nihon shinbun kiji detabesu

On-line Service: G-Search, Nikkei Telecom

Nihon keizai shinbun kiji detabesu

(See also the kiji sakuin section in the following entry.) Includes full text articles from the Nihon keizai shinbun, Nikkei sangyo shinbun, Nikkei ryutsu shinbun, and Nihon kin'yū shinbun.

On-line Service: G-Search, Heiwa Information Center, Nifty-Serve, Nikkei Telecom

Nikkei Nyusu Terekon (Nikkei Telecom News/Retrieval)

Newspaper articles and information are available in several forms through the News/Retrieval Service portion of Nikkei Telecom, an on-line information service.

The "Riaru taimu jōhō" (Real Time Bulletins) section of the News/Retrieval portion of the database has four components, two of which are described here. One is the "Nyusu sokuho" (Nikkei News Express) in which news is entered in real time twenty-four hours a day as it is received. Another component is the "Shinbun sokuho" (Newspaper Express) section which provides the morning edition of selected newspapers on-line as soon as they are "put to bed" the night before. The evening editions are on-line in the early afternoon before the papers are on the street or delivered to subscribers. The following papers are included: Nihon keizai shinbun, Nikkei sangyo shinbun, Nikkei ryutsu shinbun, Nikkei kin'yū shinbun, Nihon shōken shinbun, Mainichi shinbun, Asahi shinbun (morning and evening editions), Yomiuri shinbun, and The Japan Times.

The Kiji sakuin (Article Index File) provides title and keyword searching for the eight newspapers listed above as well as the Nishi Nihon shinbun, Shizuka shinbun, Minami Nihon shinbun, and the Nikkan Kōgyō shinbun. The Mainichi Daily News and The Japan Economic Journal are also included. Once again, this is not a complete listing of newspapers provided by Nikkei Telecom. Nikkei Telecom also offers access to Nippon Telephone and Telegraph’s Taun pēji (a telephone and address directory), weather reports, Chintai jūtaku jōhō (listings of rental properties), a restaurant guide, hotel and Japanese-style inn directory, and current information on cultural events and festivals.

Complete information on the Nikkei News Telecom Service is available from Mitsui & Co. (U.S.A.) Media and Information Business Department. (Telephone: 212-878-0037.) Mitsui has made the News Telecom Service available at an academic discount to universities. The
initial fee of $280.00 and the connect time charge of $1.00 per minute remain the same as before, however the monthly charge is reduced from $100.00 to $20.00

*Nishi Nihon shinbun kiji dētabēsu*

On-line Service: G-Search, Nikkei Telecom

*Shizuoka shinbun kiji dētabēsu*

On-line Service: G-Search, Nikkei Telecom

*Yomiuri shinbun kiji dētabēsu (Yomidasu) (Yomiuri Newspaper Article Database)*

Includes full text of most articles in the morning and evening editions of the *Yomiuri shinbun* since September 1986. Articles from the morning and evening editions of the Osaka, Western and Central Japan editions are included from August 1990. The database supports free-term searching and is linked to an authority system. As of August 1992, there were 570,000 articles in the database.

On-line Service: PC VAN, Nifty-Serve, Nikkei Telecom, Yomiuri Shinbun

Updated: Daily

*Yomiuri shinbun nēusu sokuho (Yomiuri News Express)*

Text of articles appearing in the morning and evening editions of the *Yomiuri shinbun* placed on-line before the papers are printed.

On-line Service: Nifty-Serve

Updated: Daily

MAGAZINES (Full Text Databases)

*Aera*

Includes full text of all articles in *Aera*, a general interest magazine covering current news, social, political, business, and cultural events.

On-line Service: G-Search, Heiwa Information Center, Nifty-Serve

Updated: Weekly

*Shūkan Ekonomisuto sokuho*

Full text of articles published in the *Ekonomisuto*.

On-line Service: Nifty-Serve
Updated: Weekly

**Eru Netto (EL NET)**

EL NET is a database maintained by Erektoronikku Raiburan Kaisha (Electronic Library Inc.). This firm was created by Dentsu, the largest advertising agency in Japan, in partnership with seventy other companies. The purpose of the company is to "maintain a database of information (including graphic images) produced by publishers, newspapers, and other communications groups which can be delivered to users quickly by fax."

Keyword searching is provided for 37 newspapers and over 120 periodicals included in the EL NET database. As an electronic library, the firm provides an automated clipping service called ELMOR (EL morning review). Clients establish a profile of keywords defining the range of topics they are interested in and the system searches for corresponding articles in 37 morning newspapers between 7:00 and 10:00 a.m. Japanese time and sends them to subscribers by fax.

The EL NET database consists of selected articles from the newspapers and periodicals which are then indexed by the staff and stored on optical disk for immediate retrieval and delivery. Although coverage is comprehensive, EL NET does not claim to contain every article in each publication it indexes. Among the periodicals included are: *Aera, Sandō mainichi, Shūkan yomiuri, Jitsugyō no Nihon, Tōkei geppō, Sekai shūhō*, and *Ōru seikatsu*. The majority of the serials in the EL NET database deal with business and economics.

**GENERAL REFERENCE SOURCES**

The following general reference sources are available on-line or on CD-ROM. In some cases, content and access points are very close to the printed version. Usually the electronic versions offer greatly expanded search capabilities and currency. Readers may not be able to browse the databases in the same way as the printed edition and, in some instances, the electronic and print versions may be different in content.

**CD Gendai Nihon shippitsusha daijiten** (Dictionary of Contemporary Japanese Writers on CD-ROM)

CD-ROM: ¥80,000 (US$727.00)

**Gendai jinmei jōhō jiten** (Dictionary of Contemporary Biography)

On-line Service: Nikkei Telecom

**Gakujutsu zasshi sōgō mokuroku** (Union Catalog of Scholarly Periodicals)

CD-ROM: ¥75,000 (US$681.00)
Gendai yōgo no kiso chishiki (Dictionary of Current Terms and Phrases)

On-line Service: Nikkei Telecom
CD-ROM: approximately ¥25,000 (US$220.00)
Electronic Book: approximately ¥4,000 (US$35.00)

Heibonsha hyakka daijiten (Heibonsha Encyclopedia)

On-line Service: Nikkei Telecom

Kenkyūsha kenkyū kadai soran (Directory of Researchers and Research Topics)

Electronic Book: ¥7,500 (US$65.00)

Kōjien (Dictionary of the Japanese Language)

CD-ROM: ¥28,000 (US$250.00)
Electronic Book: ¥95,000 (US$863.00)

Monthly Index

An index to articles in fifty Japanese periodicals. Although chiefly for business, general interest periodicals such as Chūō kōron, Bungei shunjū, and Gendai are included.

On-line Service: Dailine-PC

Nichigai Ashisuto (Nichigai Assist)

Nichigai Assist is an on-line service composed of databases created for the compilation of the various reference works published by Nichigai Associates. Keyword and Boolean searching are available in both on-line and CD-ROM formats. The following files are among those offered in this service:

WHO - Index to biographical information

Gives name, pronunciation of name, nationality, dates of birth and death, educational background, employment, address, and telephone number of the biographee. Also included are citations to works written by and about the person.

On-line Service: G-Search, Nichigai Ashisuto
Additions: About 20 to 30,000 entries per year
Updated: Weekly, obituaries noted daily
Available on CD-ROM as CD hito jōhō

SCAN - Business and technology
MAGAZINE - Index to major Japanese magazines

Give author, title, publication data for articles in over 29 newspapers, 16 weekly magazines, and 50 monthly magazines.

Inclusion: 1983-
Updated: Weekly

BOOK


Additions: Between 30 to 40,000 titles per year (100 to 150 per day).
Updated: Weekly

Also available on CD-ROM as CD-BOOK. One disk indexing over 170,000 titles covering the period 1986-1990 costs ¥60,000 (US$530.00).

PRIZE

Includes biographical information on winners of prizes in Japan.

Tōhan shoseki jōhō (Tohan Book News)

On-line Service: Nikkei Telecom

Zasshi kiji sakuin (Japanese Periodicals News)

On-line Service: NACSIS

OTHER SOURCES

The following databases having research value in the humanities and social sciences are commercially available in Japan:

Chūgoku jōhō (China Information)
On-line Service: Nikkei Telecom

Dēbēsu daichō (Register of Databases)
On-line Service: Nikkei Telecom
Debesu dairekutori (Database Directory)

On-line Service: NACSIS

Gakkō kihon chōsa hōkokusho (Reports on Japanese Education and Schools)


Gakui ronbun sakuin detabēsu (Doctoral Dissertation Index)

On-line Service: NACSIS

Ishin shiryo kōyō dētabēsu (Database of Materials on the Meiji Restoration)

On-line Service: NACSIS

Keizaigaku bunken sakuin dētabēsu (Economics Literature)

On-line Service: NACSIS

Kenkyūsha dairekutori (Directory of Researchers)

On-line Service: NACSIS

Kokubungaku Kenkyū Shiryōkan Databases

The Kokubungaku Kenkyū Shiryōkan (National Institute of Japanese Literature) offers three on-line databases which are all electronic versions of printed sources: Maikuro shiryo mokuroku, Wa kosho mokuroku, and Kokubungaku ronbun mokuroku. The databases are available through campus-wide computer networks at universities and by direct telephone connection to the Institute.

Kokusei chōsa (Census of Japan)

Available on-line from 1980 through the Nihon Tōkei Kyōkai.

Meiji-ki kankō tosho maikuro-ban shūsei sakuin (Index to the Meiji Era Books Microfilm Collection)

This CD-ROM index from Maruzen provides author, title, and subject access to a large microfilm set containing approximately 110,000 Meiji era imprints held by the National Diet Library in Tokyo.

Mohan ropō (Model Six Codes of Japan)
CD-ROM: ¥120,000 (US$1,090.00) - includes search software, manuals, and disk for current year. Subsequent disks issued annually are ¥30,000 (US$272.00)
Electronic book: ¥7,500 (US$68.00)

NHK TV nyūsu genkō fairu (NHK News Script File)

Database of scripts used on NHK television news broadcasts.
On-line Service: Dainline
Inclusion: 1988-

Shokuinroku (Directory of Japanese Government Employees)

Available on CD-ROM through the Ōkurashō Insatsukyoku (Printing Bureau, Ministry of Finance) for approximately ¥175,000 (US$1,590.00).

Zenkoku shi chō son dētabēsu (City, Town, and Village Database)

Statistical information in 700 categories on Japanese prefectures, cities, towns, and villages available on-line through Nihon Tōkei Sentā (Nippon Statistic Center).

The Japanese government has made financial support available to create a growing number of databases at universities, research institutions, and other organizations interested in the collection and diffusion of information. These databases are not strictly commercial products and, as such, are rarely available through standard information providers. Some of the following databases may be available only to "affiliates," but most of them could be accessed in Japan if the proper application procedures were followed. Information available to the authors regarding these databases was sketchy at best and we present the following list as an indication of the scope and variety of noncommercial databases being developed in Japan.

Kanseki dētabēsu (The Chinese Premodern Books Database)

A descriptive catalog of premodern Chinese books held by the Kobe University Library.

Gakkai happyō purepurinto denshi fairu (Electronic File of Conference Paper Preprints)

Bibliographic citations to advance copies of papers presented at academic conferences.
Kyōiku sofutouea dētabēsu (Educational Software Database)

Directory of educational software developed by teachers, researchers, and students.

Hō-seiji ishiki chōsa dētabēsu (The Law and Political Science Public Opinion Database)

Chimei dētabēsu (Database of Japanese Geographic Names)

Dētabēsu jinbun shakai kagaku kankei gakujutsu ronbun (Index to Scholarly Articles in the Humanities and Social Sciences)

Nihon koten bungaku dētabēsu (Japanese Classical Literature Text Database)

Toshokan jōhōgaku dētabēsu (Library and Information Science Database)

LIBRARY CATALOGS

Most large university libraries in Japan now have some form of automated catalog. However, like their paper-based predecessors, access is limited to on-site use by members of the university community and authorized visitors. At the present time, On-line Public Access Catalog (OPAC) use at many universities is hampered by a shortage of terminals and slow response time during periods of peak use. As far as the authors know, there is no dial-up access to any university library OPAC in Japan, although some institutions are reported to be planning such capability for the near future. There appear to be no concrete plans to make individual university library catalogs available on the Internet anytime soon.

A portion of the catalogs of the Kokuritsu Kokkai Toshokan (National Diet Library) are available on-line at the library. A CD-ROM version called J-BISC is also available. It currently consists of a three-disk set which includes holdings from 1969 to the present.

The only unified source for bibliographic data and holdings information for libraries in Japan is NACSIS-CAT, the on-line union catalog of books and serials maintained by the National Center for Science Information Systems (NACSIS). Known as the Mokuroku shozai jōhō dētabēsu, it is the largest and most comprehensive collection of library catalogs in Japan. In the beginning, it was limited to national universities, however, many private universities were later permitted to join. In 1992, two-year colleges, private schools, and special libraries were also allowed to participate. As of October 1992, 222 institutions were active in the on-line catalog. Most original cataloging is done by the libraries of large universities. Smaller institutions modify existing records with local data for their own use and attach their holdings. The modified versions can then be used to produce a local catalog.
Direct access to NACSIS-CAT is limited to libraries contributing cataloging data. Other educational institutions and their affiliates may access the on-line union catalog through the NACSIS Information Retrieval Service (NACSIS-IR). This is accomplished by registering with NACSIS, establishing an account, and obtaining a password. The connect charge for the on-line union catalogs is ¥30 for each search session. NACSIS is not available to the general public, but only to affiliates of educational organizations.

In December 1992, fifteen NACSIS databases were made available to the American research community through the National Science Foundation and the Library of Congress. Although primarily intended for researchers in science and technology, the databases available in this country are extremely valuable in the humanities and social sciences. We understand that the contract for this service expired in February 1993. NACSIS is reported to be on the Internet and may one day be available in its entirety to researchers outside Japan who have access to personal computers with Japanese software. As of early June 1993 the National Center for Information Systems is not issuing passwords to overseas users.

Aoyama Gakuin University Library began to use a CD-ROM-based public access catalog in 1990. In 1992 the system was made available to students in the Aoyama Tandai library. The catalog, known as Aoyama Gakuin University Library Resources Online Retrieval Assistance System (AURORA), is accessed through terminals placed throughout the library system. CD-ROM drives have been connected to personal computers in the research institutes and some faculty offices. Orientation sessions are presented on how to use the catalog and a compact 32-page searching manual is available. The software enables patrons to search by author, title, publisher, call number, and location. Holdings information for periodicals is available. Users may also choose to view a screen display which gives full bibliographic information. Boolean operators "and" and "or" are also supported. Function keys allow users to easily switch between the western-language and Japanese-language catalogs which are maintained in separate databases. The CD-ROM catalog is updated every month.

Keio University recently brought up an on-line public access catalog called KOSMOS. Waseda University uses a locally modified Japanese version of DOBIS software called WINET. UTOPIA is a campus-wide information network at Tsukuba University which includes commercial databases as well as the university’s OPAC known as TULIPS. Tokyo University has a similar system known as TOOLS-IR which also includes an OPAC.

ACCESS

Individuals and organizations can access on-line databases in Japan through various extended service providers. Five such providers are described below:

G-Search is an integrated database service accessible through the Fujitsu VAN network, FENICS. Users in Japan are charged an initial fee of ¥15,000 (US$132.00). Additional charges apply for each database used. For example, to use the HIASK database, a G-
Search client would pay ¥20 for each headline retrieved, ¥50 for each headline and summary retrieved, and ¥150 for each full text article retrieved. All databases offered by G-Search can be searched with one set of protocols and it is possible to execute the same search on more than one database at a time.

The G-Search service was formerly available to individuals and organizations in North America through Japanese Language Services in Boston. However, Fujitsu no longer supports accounts outside Japan. Libraries may still request custom searches on the G-Search service by contacting Mr. Takeshi Tokushige of Japanese Language Services at (617) 338-2211 or by fax at (617) 338-4611.

Nifty-Serve describes itself as Japan's largest personal computer information service provider. It was founded in 1986 and began operation in April 1987. The network serves over 350,000 members and provides access to approximately 200 Japanese databases, 267 forums, an e-mail system, and electronic bulletin boards. It is also a gateway to Mitsubishi Sōgō Kenkyūjo's Dailine-PC service and is connected to the WIDE-NET which is a network of Japanese universities and research organizations. Nifty-Serve is available in North America through CompuServe and by direct individual subscription. For subscribers in Japan, there is an initial fee of ¥5,000 which includes a membership kit and communications software. The basic charge for connect time is ¥10 (US$0.09) per minute. Use of some databases requires an additional fee. Nifty-Serve is available twenty-four hours a day, seven days a week.

PC VAN, operated by NEC, began commercial service in March 1987 and claims to be the largest personal computer network in Japan with over 500,000 members at the end of 1992. An initial fee of ¥3,000 (US$27.25) is required of new members. A monthly fee of ¥2,000 (US$18.20) is charged and some services require additional fees. PC VAN accommodates many special interest groups (SIG) and closed user groups (CUG). It also has an e-mail system and an on-line software library. It is a gateway to the C&C VAN database, Nichigai Ashisuto, Dailine-PC, and Nikkei Terekon BiZ. PC VAN is accessible through General Electric's GEnie service in the United States. PC VAN members also have access to fee-based on-line translation services. This includes access to NEC's PIVOT machine translation software. The services of a team of translators is also available for manual translations. In addition, PC VAN offers onrain magajin (Online Magazine) which contains daily serializations of novels and mystery stories by contemporary writers. Files on museum exhibits, ski conditions, and used car listings are also available. Full color capability was introduced at the end of 1992 and the ability to transmit graphics is planned for the future.

Asuki Netto charges an initial fee of ¥3,000 for individuals and a monthly fee of ¥2,000 for a maximum access time of five hours. Use that exceeds five hours costs ¥20 (US$0.18) for each three minutes. Supplementary charges apply for some services.

Asuki Netto offers access to Ji Ji tsūshin nyūsu, the Mainichi shinbun database, Zasshi indekusu jōhō "DATAMAN", and Nyūsuresu "INSIDER." Asuki Netto is also a gateway to
the G-Search service. Members have access to a public domain software library (POOL) which includes programs for Macintosh, NEXT, OS/2, Unix, and Windows operating systems. There is also a Japanese-English, English-Japanese machine translation service available.

The Fuji Sankei Group established an information network called EYE-NET in 1985. In addition to offering e-mail, voice mail, fax transmission, electronic bulletin boards, and online translation services, the network provides some standard database services such as Nichigai Ashisuto, Teikoku Databank, and Nihon Shuppan Hanbai Publications Database. EYE-NET is a bonanza for popular culture enthusiasts. It provides an opportunity for online discussions with entertainers, television personalities, and disk jockeys affiliated with the Fuji Sankei Group. Users can access datafiles relating to television quiz shows, news broadcasts, animation, horse racing, fishing, concerts, sumo wrestling, travel information, baseball games, on-line home shopping, pc user groups, and many, many other files related to contemporary life in Japan. The initial fee is ¥2,000. Members pay an annual fee of ¥6,000 (US$54.55) and a connect time charge of ¥10 per minute.

PC VAN, Asuki Netto, and EYE-NET all accept VISA for payment of services.

Individuals and organizations unwilling or unable to purchase CD-ROM packages and access to online services may still use these products for a fee at the Jōhō Toshokan RUKIT known variously in English as the RUKIT Intelligent Library and the RUKO Intelligent Terminal. Located in Ageba-cho in Shinjuku Ward in Tokyo, RUKIT provides some 2,000 electronic information sources from around the world to its clients. Corporate memberships carry an initial fee of ¥30,000 (US$265.00) and monthly fees of ¥15,000 (US$132.00). Individual membership requires an initial fee of ¥5,000 (US$45.00) and monthly fees of ¥2,000 (US$17.00). Student discounts are available. In addition, all members must pay the actual charges incurred for online database use. Individual members pay an additional ¥500 (US$4.50) facilities charge each time they come to the library. Corporate members may request the RUKO staff to do some searches free of charge. For individual members, this service costs ¥3,000 (US$26.00) per half hour. For an additional fee, corporate members may request that a search be done and the results sent to their office by fax. This service is not available to individual members. All members may take advantage of the training and informational seminars presented at the library. The RUKIT NET, consisting of e-mail, electronic conferences, and assorted database information, is also available to all members.

RUKIT has fifteen NEC PC 9801 series computers, one Sony Quarter L, and two Toshiba J3100 personal computers available for member use. The reference desk provides help with database selection and searching. Clients may also use a Panasonic CD-ROM viewer which is placed at the reference desk. It is reportedly very handy for quick reference. A collection of database manuals and computer books is also available.
RUKIT offers access to the following Japanese on-line services: C&C Van, Nichigai Ashisuto, G-Search, Nikkei News Telecom, JOIS, Dailine, and PATOLIS. CD-ROM products include: Shokuinroku, Yūka shōken hōkokusho sōran, Denshi Kōjien, CD hito jōhō, HIA SK, JETROACE, Jinbutsu jōhō, SCAN, BOOK, CD WORD, J-BISC, LEX/DB, Rīgaru bēsu, and NHK dekigoto jōhō. Many more Japanese and foreign databases are also available.

Electronic databases are powerful tools which can greatly facilitate the research process. For example, a scholar or student could search ten years of microfilm acquisitions held by the Kokubungaku Kenkyū Shiryōkan in one on-line session and download the results immediately. With the printed catalog, it would be necessary to go through ten individual volumes and copy each citation by hand. The in-depth subject and keyword access to newspapers provided by electronic databases makes it possible to locate articles that previously could be found only if one were to read each page and article of a newspaper. Combined with traditional research methods and sources, the electronic databases offer the information seeker vastly increased access to both new and familiar sources.

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