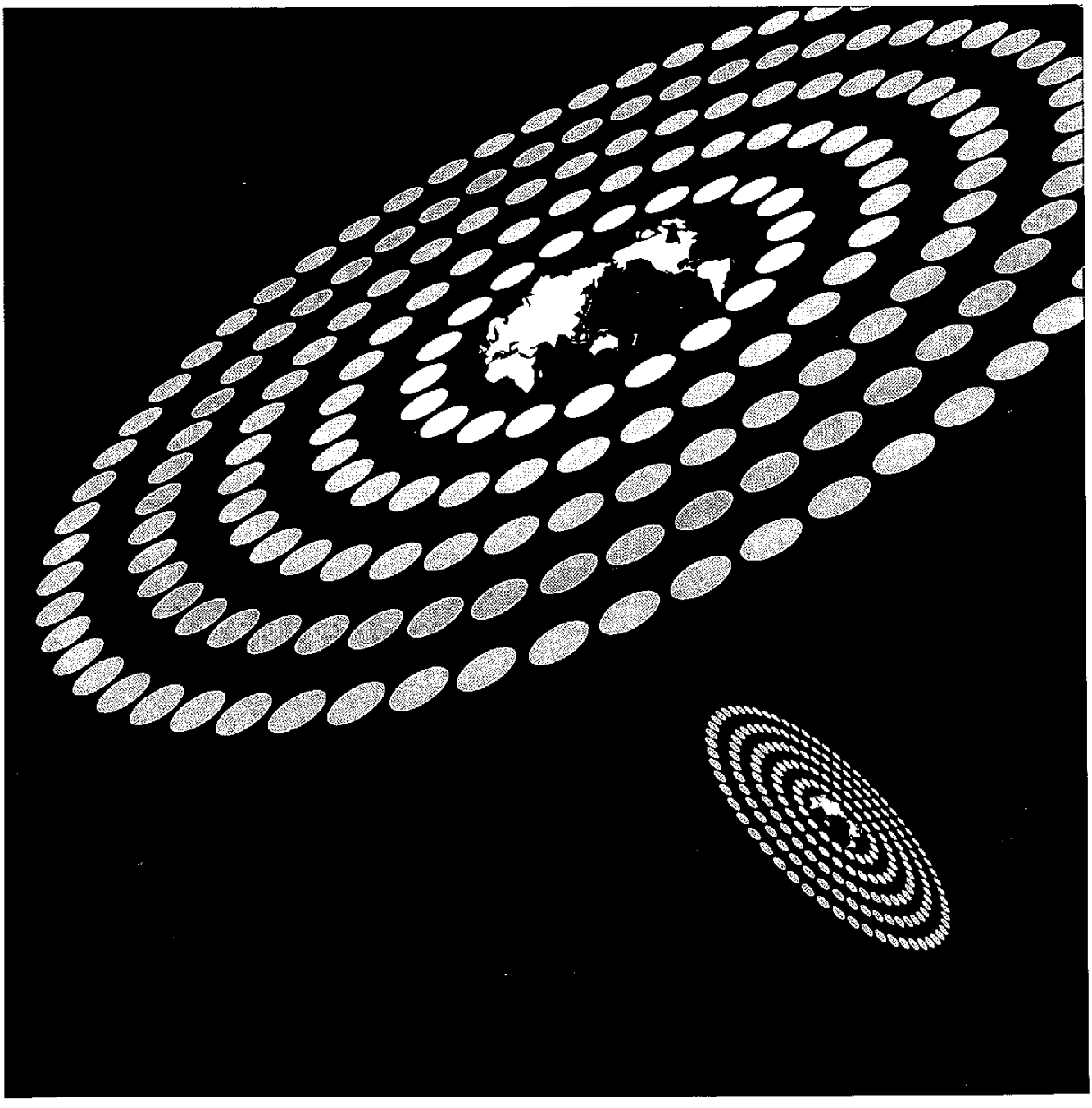
12-DPC-07

ISSN 0918-6484

Databases in Japan

2000



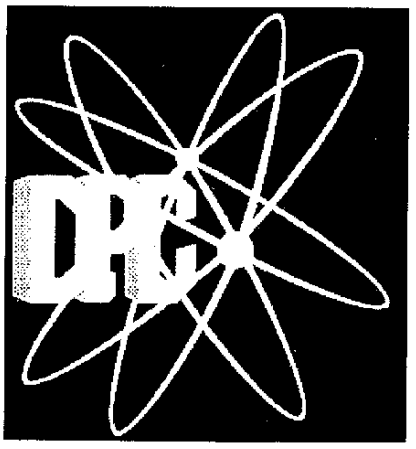
Database Promotion Center, Japan

Database Promotion Center, Japan (DPC) was established in 1984 with the information suppliers, users and related industrial circles approved by the government. DPC is a non-profit organization aimed at the promotion, research, production and dissemination of database services worldwide.

KEIRIN

This work was subsidized by the Japan Keirin Association through its Promotion funds from KEIRIN RACE.

Databases in Japan 2000



Database Promotion Center, Japan

Databases in Japan 2000

Contents

List of Figures

List of Tables

Appendix

Special Articles for 2000

A. The Role of Databases in the New Digital Age - Recollections of "Jodan" (Information Cut Off)

Hiroshi Inose
Chairman
Database Promotion Center, Japan

1. Urgency of Developing Databases

In recent years, the importance of information infrastructure has gained greater recognition in industry, government, and academia. The Headquarters for the Advanced Information and Telecommunications Society Promotion, headed by the Prime Minister, has been set up to help build the information infrastructure. The results of discussions by this body are progressively being translated into government policies. Special allocations for information and communication have been set aside in both regular and supplementary budgets, and huge national funds are now being invested in developing infrastructure and technology. This is evidence of the increased awareness of the importance of IT, which is an encouraging development.

There are three main elements of information infrastructure: networks, applications, and content.

With regard to networks, there has been rapid, broad-ranging progress as shown by the accelerating demand for the Internet and portable telephones, the nationwide roll-out of fiber-optic communication networks, and development of digital television broadcasting with many channels. These have led to large increases in capacity, speed, and functional performance. Along with this development, great efforts are being made to solve various technological and institutional problems related to the integration of telephone networks, data networks, and broadcasting networks, and the development of seamless wired and wireless telecommunications.

With regard to applications, various types of sophisticated software are being developed on a large scale. Such applications are promoting informatization of electronic commerce, government administration, medical care, social services, education and research, disaster prevention, the environment, and transportation. Developments include not only basic software for personal computers and advanced simulation by supercomputers, but also a wide range of applications for different purposes. To keep pace with and promote these developments, secure and reliable technologies are being developed for maintaining secrecy and certification, for securing connectivity and mutual operability, and for developing multi-purpose multimedia terminals.

Regarding content, much attention is focused on television programs, animation video programs, and computer games, while databases regrettably attract less attention. One reason for this is that, while experts know that full text databases are at the heart of electronic library services and have a huge potential for many conventional services such as printing, publishing, and referral (brokerage), there are many institutional barriers and various vested interests. At present, therefore, databases cannot provide all the services that users expect. It is often pointed out that the development of information infrastructure in Japan has been slow compared to that in Western countries, especially the United States, but it is not widely known that development has been slowest in the field of databases.

2. "Jodan" Campaign

Permit me to recall an old episode. During the oil crises in the 1970s when the country's economic foundation was threatened, the term "yudan" became fashionable ("Yudan" means to be "careless", but it can also be read as "oil cut off" in Japanese language.) At that time, I had been appointed to build a computer network among universities, and I was working on developing a packet exchange based upon the X.25 protocol, which was becoming an international standard at that time. What struck me was that there were hardly any information resources in Japan, especially databases, that universities could share with one another.

So, copying the popular pun with "yudan" (which usually means carelessness, but which can also mean "oil cut off"), I coined the term "jodan" (which means "being cut off from information," but which can also be read as "a joke"). Using this term, I began to make an appeal about how being cut off from information will cause great difficulties in Japan, just as if being cut off from oil. Perhaps it was taken only as a joke, for it was a lonely campaign. But I used every opportunity I had in television and radio appearances as well as articles I wrote for newspapers and magazines to make intelligent people aware of the issue. One such effort was a short essay I contributed to the monthly "Chuo Koron" (December 1983 issue) under the title "Japan, an IT Powerhouse but an Information Resources Weakling."

In the article, I summarized eight points that I believed needed to be addressed at that time, and appealed to society to tackle those issues.

Looking back some 20 years later, fortunately some of them have been realized, but I cannot help but notice that others have not been achieved yet, and we must continue to work toward their fulfillment. So, let me first briefly recapitulate the eight points.

(1) Public investment for development of databases

Databases in fields such as science, education, and welfare, which constitute the infrastructure of information society, have little chance of becoming financially viable on their own. While we may look to the vitality of the private sector to address this task in the long-term, for now and the

foreseeable future it is important to make substantial public investments, to facilitate and make available long-term, low interest rate loans, to introduce preferential tax measures, and to undertake a broad range of other public measures.

(2) Disclosing Information Held by Government Agencies

All sectors of government agencies hold vast amounts of various information including volumes of statistics compiled for implementing their respective administrative objectives. However, most of this data, especially the original, raw data, are not made public, and so the data in its current form cannot be used for developing databases. It is necessary, therefore to legislate a law for disclosing information held by the government. Toward this end, it is also urgent to pass laws that will include protection of privacy and maintenance of national secrets.

(3) Using Information in the Private Sector

General trading houses and other Japanese firms operate on a global scale, some of which have telecommunications networks that are larger than that of a small country. Daily, huge volumes of information are collected through these extensive networks and used for decision making. Not every data includes much information that is confidential for the company, and this would be particularly useful if made publicly available.

Therefore, these firms should be encouraged to provide information that can be used publicly by selling it themselves or through an information provider. The firms would thus improve services to their customers and gain benefit therefrom, and also raise their corporate profile by providing information as a public service.

(4) Development of Information Distribution System

Information is often considered an intangible asset, but as in the case of tangible assets, there needs to be a definite distribution system, from the supply of raw materials, through to processing, sale and consumption, otherwise, information will not be used widely. Merely collecting information from government agencies and the private sector does not lead to distribution of information. Information provider businesses must be developed that can input huge amounts of information collected in a form that can be processed by computer, and perform processing such as initial handling, as well as storage and updating.

It is also necessary to develop technologies for sophisticated database management, technologies for using communication satellites and other new media, and technologies for standardization to enable users to access various databases more easily. Laws must also be established regarding copyrights, and a broad range of institutional and technical measures must be implemented to ensure the legitimacy of information and system security.

(5) Establishment of a System for Using Information in Japan

Japan needs to understand itself better. The priority is therefore to build databases of information generated within the country. As Japan accounts for one tenth of the world's total production, it generates roughly one tenth of all information in most fields, though there are differences among fields. Japan's socioeconomic activity is at a high level, and its dependence on information is increasing each year. Just as all of Japan's industries developed first to meet domestic demand and then exported the surplus for further development, so too in the field of information, databases should first be built to satisfy domestic demand, then be developed further to meet overseas demands.

(6) Providing International Language Services

Unless Japan makes available its information, which comprises roughly 10% of the world's total, the world's information supply will not be complete. Although there used to be little overseas interest in information related to Japan, today there is such a huge demand for more information on Japan that many consider the Japanese language itself to be a non-tariff barrier. As a major member of the international community, Japan has a duty to provide information on itself in an organized, systematic manner.

By providing more information, Japan could reduce the imbalance between the inward and outward flows of information to and from Japan, which tends to be one-directional with an excessive dependence on information from overseas.

Although translation is a problem, machine translation has great potential. Even if the information provided by Japan is not in perfect English, if the content is of superior quality, people will make efforts to understand it.

(7) Developing the Environment for Effective Use of Information Resources

One of the reasons why the development of database services has been delayed in Japan is that there is no long-established social custom for sharing information. On the contrary, as in the case of various hereditary schools of classical arts and traditional performing arts, there is a strong tendency toward monopolizing information, keeping it secret, and thereby increasing its scarcity value. Today, the world is moving in the opposite direction: by opening up information and encouraging more people to use it and depend upon it, the firms involved can boost profits and thus capture a monopolistic share. Unlike tangible assets, the intangible asset of information is not diluted if shared with others. This point needs to become widely recognized if society's awareness is to shift dramatically.

With regard to the question of information, the existing government structures and legal systems were established while the social and technological environments related to information were still immature, making it difficult for the government to develop and implement policy responses in a timely manner. But now that social and economic activities are highly dependent on

information, it is time to cast off the baggage of the past. We need to formulate information policy guidelines from a long-term perspective, and to allocate roles to various sectors clearly to eliminate overlaps and gaps.

(8) Strengthening of the Intellectual Community

A database is a storehouse of knowledge. Whether in the field of natural sciences, social sciences or humanities, to develop advanced or pioneering databases, the cooperation of the intellectual community in the relevant field is essential. Whether it is an academic or professional society or association, good databases can help such intellectual communities to develop. Thus, growth and strengthening of intellectual communities will be indispensable not only for the development of databases, but also for global mutual understanding. By extending the invisible networks among people who share the same interests and concerns globally, culture and world peace will be promoted.

3. The Role of Databases in the Future

Of the eight points raised above, the greatest progress has been made in the area of policies and measures undertaken by the government. As noted at the beginning of this article, the Advanced Information and Telecommunications Society Promotion Headquarters drew up the basic plan and implementation guidelines, and the contents of the policies and measures are continuously updated in response to the changing environment in various fields. There is now strong budget support as well. Also, a law for restructuring the central government ministries and agencies has been passed, and work is now underway on "General guidelines for the restructuring of central government ministries and agencies" to implement the law.

In addition, the Law Concerning Access to Information held by Administrative Organs (Information Disclosure Law) was passed recently, and stipulations on the protection of privacy are now likely to cover not only information on individuals held by the government but also information in the private sector as well. Thus, serious efforts are being made to address points (1), (2), and the latter part of (7), and the direction of such efforts has been set.

However, public investment tends to focus on software development rather than database development, and little progress has been made in making available the raw, original data held by the government, mainly due to cost. These issues need to be tackled.

With regard to the private sector, there are still many problems in developing databases of information generated in Japan, exchanging such information within and outside of Japan, and making effective use of intellectual communities. Thus, much more effort is needed regarding points (3), (4), (5), (6) and (8) in the future.

In the past 20 years since I wrote that short essay, there have been many dramatic technological innovations that have led to significant changes in the information environment. The first of these is

the great leap in the volume of information transmission thanks to the development of fiber-optic communication, and hence the rapid global expansion of the Internet. The second is the rapid reduction in price and increase in performance of personal computers and workstations, and their penetration among a broad range of users including many ordinary households. Thirdly, the capacity of external memory devices such as magnetic disks has rapidly increased while size and cost have fallen. Fourthly, portable telephones have become so widespread in Japan and elsewhere that their number now equals or exceeds that of conventional fixed telephones, and alongside this development, wireless communication has spread. Fifthly, highly efficient digital coding of image signals has been achieved, which has led to the integration of broadcasting and telecommunications.

From the standpoint of databases, the Internet and the Web have made decentralization on a global scale entirely eminently feasible; the spread of personal computers and other terminals has expanded the potential range of database users to include ordinary households; large disk capacities make full-text databases feasible; mobile telecommunications allow databases to be accessed from portable terminals; and the integration of broadcasting and communication through digitization is opening up a wealth of opportunities for multimedia databases.

If the database industry grasps this great opportunity and responds appropriately, then the future is bright. However, various problems remain to be solved.

First, as the volume of information generated through the dissemination of the Internet explodes, there is an even greater need for search engines and data-mining technologies for extracting the necessary information efficiently.

Second, all of the information now in the form of text, paintings, etc. that have been accumulated throughout history, as well as all of the images and other information being produced daily in huge amounts, must all be digitized. We must develop systems that can index and add summaries on such materials automatically, as well as store and accumulate such data, and provide them on demand.

Third, remembering that diversity of language enriches human culture, we must develop databases that can be used not only in Japanese and English, but also in other languages, especially the languages of neighboring countries.

Fourth, we can develop databases that use media conversion and computer graphics technologies to process information on a disaster, environmental development, automobile traffic, and so forth, to develop map information, and to provide it to mobile terminals. Such databases will improve quality of life and safety. In this field, the GIS Project of Database Promotion Center, Japan is of particular interest.

In the foregoing, I have indicated just a few of the problems that we need to resolve, though many problems even from 20 years ago remain. About 15 years ago, I worked with the late Professor Pool of the Massachusetts Institute of Technology (MIT) on a comparative study of information distribution in Japan and the United States. Even back then, we found that over 90% of information generated was not used, but was relegated to obscurity. And yet at the same time,

people could not easily obtain information they needed because of inadequate databases.

The amount of information generated today is far greater than that 15 years ago. One reason is that individuals and groups can now freely transmit information via desktop publishing and E-mail without having to go through a publisher, academic association, newspaper company, or broadcasting company. Digitization of television and radio as well as the profusion of channels have boosted this trend. Compared with this huge increase in the volume of information generated, relatively little information is stored in databases, and the archiving function of film and video libraries is quite limited.

In Greek mythology, Tantalus was hung upside down from a fruit tree over a river, but he could neither slake his thirst with river water nor reach the fruit. Similarly, we are in the midst of a torrent of information, yet we often cannot get the information we need. We are suffering from an acute case of "jodan," being cut off from vital information. The only solution is to create more and better databases.

B. The Role of Databases in the New Digital Age

Edward E. David, Jr.
Former Science Advisor to the President of the USA

1. Introduction

Among the current wise sayings about information technology (IT), is one that distinguishes databases. The saying is "Content is King". Databases are primarily content and provide that to transactions, references, and the archive of knowledge. However, databases would lie fallow were it not for the ease and accuracy of access that digital hardware and software can provide. These technologies allow knowledge to be derived from massive databases and such knowledge is becoming the primary driver of the global economy. These capabilities will animate the future for databases.

Databases in their broadest context have a long and honorable history. Early writing on clay tablets found in Mesopotamia reveals inventories of stores, and such tabulations are forerunners of today's databases. These typically are highly structured, extensive, containing millions or billions of records, and are computer accessed, edited, and merged into overall bodies of content. Indeed databases are essential to activities in the modern world of computer-driven functions. In fact, the vigor of database compilations and their widespread appearance on the Internet and other online networks can be traced to today's boom in personal computers, but the character of such computers may change.

From the user standpoint, databases must be easily accessible, relevant, and usable in a timely way. This prescription was recognized early in the computer era, associated with the effort to establish time-sharing software for mainframe machines. This software was aimed at providing online services to simultaneous users from a single computer. In describing such service, the developers said that time-shared computers would lead to a "memory-centered world" where databases (and computational resources) could be provided economically through telecommunication ports and circuits. The personal computer usurped that image – most resources came to be available directly on PC's, mediated by a local operating system providing other bundled services as well. As operating systems become increasingly complex, their desirability is becoming controversial. That operating mode may well be succumbing to the former idea – a client-server model. That model has evolved to the idea of a simplified computer on the client's desk linked to a central server which provides software-based services to the desktop. While that may not be the final answer, it is clear that most databases and users' software are likely to reside in servers' memories. The World Wide Web is increasingly structured that way.

The transition of databases from their classical beginnings to today is a story of technologies.

The technologies of information storage began with writing, utilized by scribes on papyrus, clay, and rock faces. Manuscripts were superseded by printing using Gutenberg's movable type, which was later automated by typesetting machines. These technologies in turn are being replaced (or augmented) by electronic media for databases. This latter transition is being powered by increasingly affordable recording media. Early recording media were electromechanical (relays), then magnetic drums, cores, and magnetic tape. Magnetic discs, hard and soft and floppy, are still widely in use. But increasingly, electronic media are sweeping the field. Electronics are faster, can be made capacious, non-volatile, and economic. Even video recording is moving in this direction. Hard discs for digital recording of TV signals are appearing in "set-top" boxes. However compact discs (CD's) give evidence that physically inscribed media are still useful and commercially viable.

This evolution of storage media has encouraged growth in the size of databases. Some are mind-numbingly large. The OCLC[i] worldwide library catalog contains over 43 million records. Other databases are even larger. Thus, the user is faced with the task of finding the desired information in a sea of irrelevant data. That is the task of so-called search engines animated by descriptions and information supplied by the user. One of the most prominent examples of a large database requiring sophisticated search methods is the one intended to hold the human genome. That genome is denoted by a string of some three billion letters. This string makes up the chromosomes which are human beings' genetic heritage. This immense database is being compiled by an international research effort. The evolution of digital technology has been an essential tool for recording and using the human genome.

2. Database Content

This account so far relates to the infrastructure for storing and communicating the content of databases. Beyond that is the structure of the content itself. It is customary to think of database content as comprising multiple individual records each representing an item to be catalogued. For example, the records in the NACSIS[ii] and OCLC databases describe books, articles, and reference materials in libraries or archives. These records can be accessed by citing author, title, descriptors, or combinations of these and other indices. Many databases incorporate the relations between individual records using pointers contained in the records themselves. By following a sequence of pointers, users can obtain a compendium of related database records.

In advanced database services, users can call up (click-on) the full text or the table of contents of a reference listed in the database. Numerous other variations of database structures aim at making information and knowledge accessible for users. Software programs which augment the database listings are the keys for this functionality. This combination of hardware and software has changed the nature of information and data archives and created the modern disciplines of information technology (IT) and systems.

The information or data in existing databases is a valuable commodity. Once compiled, such

databases have long lives. Replacing them usually involves a labor-intensive process. Information services such as those provided by NACSIS and OCLC utilize many existing databases. The techniques of merging them into a serviceable whole is well understood, but still developing.[iii] Usually, the component databases retain their individuality and can be separately accessed or all accessed as a unit. In any case, the value of the content is preserved while giving the users the option of searching selected components or the whole. OCLC's WorldCat (world catalog) is so operated.

Database records in different languages often pose a problem. Some titles and abstracts in certain databases are already translated into the local language while others remain in their native tongue. In any case, it is becoming feasible to include automatic translators in database servers so that the language problem disappears. This capability is in its early stages and is best considered today as a research objective. Another objective is to find economical ways of delivering multimedia information over networks. Databases to come will be replete with audio and video content.

Quite often today, the archives of databases on which services are based are really many databases, all accessible with search tools as mentioned above. Beyond the content itself, users may very well want to know the scope, depth, record format, and content of each database so that they can be searched selectively. It may be desirable that the result of multi-database searches specify the source of retrieved records. All of these requirements imply that specifying the parameters and scope of databases in a service is a vital part of their efficient and effective use. Intelligent searching using such information can obviate the problem of being buried with irrelevant information retrieved from an over generalized search.

3. Beyond Traditional Content

Creating a functioning database from scratch involves designing a format for the entries, entering the specifics of items to be indexed, specifying the indices to allow retrieval of the content, and providing an interface so the user can easily access the database and find the desired entries. However, in many significant instances, items to be described and entered are not easily classified or ordered for database use. Among these are photographs, maps, and other pictorial materials including full motion video and audio, but also World Wide Web sites on the internet or other networks. Overlays for geographical materials and other information superimposed on pictorials, graphs, and the like are one example of what is today denoted as "metadata". Just how to handle these overlays or externalities as integral parts of databases is a relatively recent problem. Solutions for indexing such unconventional materials are not entirely in hand but are progressing. It is a research subject on the "cutting edge". There is little doubt, however, that databases will routinely contain multidimensional and unstructured materials.

The term "metadata" mentioned above, is usually defined as "data about data" and covers a

variety of descriptors of data. These include tables of contents, abstracts, format standards for database records, and other indices for accessing data. Relatively little research has been done on how users actually employ metadata in evaluating the relevance of database elements such as files, maps, articles, web sites, documents, and other information sources. Recent research[iv] on this subject indicates that readability, quality and brevity of information, timely access, relevancy indicators, and other user convenience elements are important to consider in structuring metadata content. The preferences of users should be a major consideration. Both engineering and experimental psychology are involved in designing databases incorporating ease-of-use features.

A traditional content for databases is data itself. Such data can emanate from scientific experiments, observations directly or indirectly through sensing instruments, or through new techniques such as combinatorial chemistry. This chemistry can quickly produce hundreds of thousands of compounds which must be screened to separate those with the desired properties. These huge databases have been screened efficiently using pattern-recognition techniques tailored and optimized for the task. Software incorporating these techniques makes these giant databases useful in drug discovery and other commercial tasks. Among such tasks are business applications in marketing, finance, and customer relations. This screening process is known as knowledge discovery in databases (KDD).

4. Analysis and Significant Conclusions from Databases

From the examples above, it becomes clear that essential adjuncts to databases themselves are the tools to search and find entries of importance. This realization is reinforced by the growing number of large databases. One source of large amounts of data arises with the proliferation of sensors including satellite-based cameras for imaging the earth's surface, magnetic resonance images of biological subjects, radar-derived images of planetary and ocean surfaces, and a plethora of measuring instruments used in science and engineering investigations and applications. Indeed, it is easy today to generate large amounts of data which can form databases. Thus automated methods for data analysis and finding significant structures in large databases are becoming essential. This search function is realized also in the search engines used to access the World Wide Web. There are waves of competition among internet portal companies to provide the engine of preference. This competition has invigorated the world of search. For example, many search engines have the capability of logging the usage of entries in the databases they search. So, they can list those entries which are most popular with users. This paradigm shortens search time and creates a preferred sub-database which gives rapid access to most users. But of course, if an obscure reference is wanted, it can still be found, but with delay. There will probably be no generalized search engine algorithm. Effective and efficient search seems to hinge on the particular database structure being searched. Indeed, the design of the search engine and the database itself will be done concurrently to produce the desired results. Progress in this direction would be welcome, but as a research field, system

approaches to searchable databases, are in their infancy.

A plethora of new developments in databases and their access engines is emerging. Among these are databases of personal information about users and their habits. This information tells much about peoples' preferences, their behaviors, and their histories. These sensitive data raise issues of privacy. Encryption of database entries is one possibility to keep such data secure, but that may vitiate the utility of the database, as well as slowing its operation. The ultimate resolution of the privacy vs. public issue is not yet in sight, but it is one of the more pressing puzzles to be researched. Perhaps an answer can be found by looking carefully at how individuals, corporations, and governments protect their privacy today. One hint is that the sensitivities of facts and database entries decay with time and so lose their value to people who would violate the rules to uncover them. So whatever protective means are used, they need to function only for the period of sensitivity. Of course, legal files today recognize this temporal limitation on sensitive materials. Such files are restricted from public disclosure only for a specified time; some files are closed for 25 years or more.

However, this means for protecting privacy is not the panacea. Private materials need to be available to a restricted audience. How to identify members of such a privileged audience, especially over an online connection? There is no perfect answer yet. Passwords are fallible and can be found by clever hackers, or can be divulged unintentionally. Remote personal identification is beginning to be possible. Among the means are dimensions of hands, features of faces, physiological data which can be sensed online, and combinations of such data. But personal identification is still a subject for research.

The challenge of deducing meaning and knowledge from large databases has long been recognized. The term "data mining" has emerged to describe such efforts.[v] Knowledge discovery in databases (KDD) is an active field of research. Various mathematical tools have proved useful in specific cases. Among these are hidden Markov models (HMM's), metric distance measurements between data points, feature definition and extraction, and adaptive recognition (sometimes including neural net structures). Specific applications have included sky survey cataloguing, finding land features on planets, biosequence recognition, geoscience data describing underground structures, and protein modeling to deduce molecular folding. The automated techniques for pattern recognition developed over the past three decades for military and computer uses are adaptable for KDD. Significant discoveries of prospects for pharmaceuticals in the outputs from combinatorial chemistry have been demonstrated. Despite these steps, further progress on KDD and data mining will hinge upon imaginative research.

5. Conclusion

Databases in their many forms, are already major resources across wide varieties of applications. The access and search software becoming available is increasingly making databases

an integral part of research, commercial, managerial, and reference operations. Databases as sources of knowledge are becoming essential to the global economy. However, many of the emerging software tools are not robust enough for many user purposes. Further research is required to establish fundamental design techniques for a systems approach to the complete cycle of compilation, indexing, accessing, search, delivering, and refining the information provided to the user. The research topics to be pursued cover at least the following:

- Means for indexing and delivering audio and video or pictorial materials. Multimedia databases are increasing in size and scope.
- Pattern recognition techniques for finding significant properties or structures in databases. The objective is to find knowledge in a multiplicity of data, so called knowledge discovery in databases (KDD).
- New search algorithms to increase search efficiency and effectiveness. Criteria for these desired properties are the "false alarm" (irrelevant entries) rate and the "missed detection (relevant entries not found) rate. Often optimizing these involves a tradeoff between them.
- Investigations of how users actually work with search and access tools and what results they achieve.
- Means for concurrent design of search engines and databases.
- Technological means for resolving the public disclosure versus personal privacy issue for databases involving personal data.
- Means for accurate remote personal identification.
- Means for automated language translation for multilingual entries in databases.

Research on databases and access tools is an open-ended field. Databases will become increasingly vital as their compilation is augmented by intelligent means for their use.

---

[i] OCLC – Online Computer Library Center located in the U.S.

[ii] NACSIS – National Center for Science Information Systems located in Tokyo, Japan, renamed National Institute of Informatics (NII) on April 1st 2000

[iii] G.R. Notess, A multiplicity of databases on search engines, E Contact, Oct., 1999

[iv] B. Fraser, McGluck, Usability of Geospatial Metadata, Bull. Am. Soc. Of Info. Science, V25, AVG., 1999

[v] U. Fayyad, D. Haussler, & P. Stoglorz, Mining Scientific Data, Comm. Of the ACM, Nov. 1996

I. Present State of Databases

1. Supply and Use of Commercial Databases

1.1 Market for Commercial Database Services

According to the "1998 Survey of Selected Service Industries" published in December 1999 by the Ministry of International Trade and Industry (MITI), the total sales of the database industry in Japan in 1998 increased by 12.9% over the previous year to ¥291.0 billion (or about US$2.22 billion). This marked a new record for the third year in a row, and the industry will soon break through the ¥300 billion milestone. The total in 1988 was ¥106.3 billion, so the market has increased by 2.7 times in the past 10 years.

As for the composition of sales for 1998, online services exceeded ¥200 billion for the first time to reach ¥213.7 billion (an increase of 12.7% from the year before), while offline services increased significantly to ¥77.3 billion (up 13.5%). This dramatic growth is probably due to the rapid increase in the number of Internet users, the progress in the development of networks from the IT revolution, and the improvement in the overall environment for accessing databases.

However, much of the large increase is due to the fact that the number of establishments covered by the survey increased from 383 in the previous survey to 560 this time, so the sales amount per business establishment actually declined. The sales for the establishments that were included in the previous survey is a matter of concern, with a year-on-year decline reported in the "Survey of Selected Service Industries," which is part of the official statistics. Thus, there is a contrast between the expanding sales of the industry as a whole, and the severe business conditions faced by some firms.

1.2 Distribution of Commercial Databases

According to the "FY1998 Database Directory" published in August 1999 by MITI, even though the number of reporting companies increased from 193 to 197, the total number of databases that can be used in Japan in FY1998 declined from 2,598 to 2,478, for the second year in a row. The number of domestic databases had been continually increasing since the survey was started in 1982, but this year the total declined (although slightly) for the first time by 16 to 1,227. As for databases produced overseas, with regard to those service files for which there is little demand in Japan, major agencies began to stop providing them from 1997 which was covered in the previous survey. And in this survey, the total number declined again from 1,355 to 1,251. Thus, although overseas databases used to be dominant, they are now on about the same level.

1.3 Utilization of Commercial Databases

(i) Utilization among firms

According to the "Survey on the Status of Japanese Database Services (User Edition)" conducted by Database Promotion Center, Japan (DPC) in October 1999, 71.0% of the responding firms use commercial databases, an increase of 3.5 points. In the survey, the ratio of companies "that use" a database surpassed the 70% mark for the first time, showing that the number of users is growing steadily. In terms of future intention, too, 5.8% said that they "plan to use a database within one year," so an increasing number of companies are being drawn into use.

In terms of money value of use, 34.1% of respondents said that their usage had "increased" from the previous year, while only 12.7% said that it had "decreased." One reason for this increase may be the increased installation of personal computers as a result of IT investment, that improved access environment and also increased opportunities for information search in relation to starting new businesses.

The commercial databases enjoying largest sales revenues are "Nikkei Telecom" ranking No.1, followed by "JOIS," "PATOLIS," "DIALOG," and "@nifty" in that order, and this order of ranking has not changed for three years. As for the ranking of database files with a high frequency of use, "Nihon Keizai Shimbun Article Database (Nikkei)" scored the highest, followed by "JICST File on Science and Technology Documents," "COSMOS (TEIKOKU DATABANK Corporate Information)," "Japio Patent and Utility Model File," and "TSR (TOKYO SHOKO RESEARCH Corporate Information). Thus, the core databases in the business and science and technology fields led the way.

2. New Trends in the Database Industry

2.1 Tie-up and Merger Trends in Japan

With the growth in the digital economy on the back of the IT and telecommunications revolution, there were numerous mergers and tie-ups in the telecommunications, finance, and distribution industries in Japan in the past year, all of which are, at least in part, intended to capture Internet business. The information service business is no exception to this trend, and so major database service providers sought to broaden their customer base, and have begun to forge new business strategies that cross conventional barriers in the database business.

From late September 1999, G-Search Ltd. began providing "Nikkei Telecom 21" through its Internet site "G-Search Database Service." Without acquiring a new, special ID, users of the G-Search Database Service can access a full range of information: they can access the database of articles of the four newspapers published by Nihon Keizai Shimbun, specialized publications, and information on firms and personnel. In this way, G-Search offers a wide range of business-related content and greater convenience for existing users, while Nikkei can enjoy increased sales and the

opportunities to gain new customers.

This move was followed by the merger between Nifty Serve and the Internet service Infoweb of Fujitsu to create a new brand "@nifty." This was a merger of an online information service with a provider, each having the largest membership in Japan, and so the combined membership stood at 3.66 million as of February 2000. It is a huge provider that exceeds NEC's "BIGLOBE" with 2.94 million members. @nifty has its eye on the growing electronic commerce industry, and is strengthening its Internet infrastructure in preparation. At the same time, by integrating services it is attempting to increase its ability to pull in customers, and to increase sales commissions and handling charges for the products and contents that are sold over its network. It also aims to increase advertising revenues.

In the year 2000, G-Search merged and consolidated with KMK DigiTex, the Japanese subsidiary of DIALOG in February. Thus, it will now be providing "DIALOG," the largest commercial database in the world, and "DataStar," which provides information on business, science and technology in Europe. It has thus greatly strengthened its ability to provide database services on overseas information. As for DIALOG, its online service division was bought in March by Thomson Co., one of the largest information service companies in the world.

2.2 Database Service Providers Improve Their Internet Services

According to the DPC User Survey, 96.1% of responding companies use the Internet, and so the use of the Internet has become a prerequisite for growth for database service providers. According to the survey on contracts won by online information service providers conducted by "Nikkei New Media" (March 27, 2000 issue), those service providers that began to offer services over the Internet early tended to enjoy greater growth in the number of new contracts.

According to the Vendor Survey carried out by DPC in October 1999, the ratio of those service providers that use the Internet increased from 43.5% in the previous survey to 59.8% this time, which means that roughly 60% provide services via the Internet. If those companies that "are planning to do so" are included, approximately three-fourths of vendors will be providing their database services over the Internet in the near future.

2.3 Rapid Increase via Portable Telephones

The total number of mobile telephones including cellular phones and PHS phones reached 56.85 million as of the end of March 2000, thus exceeding the total number of conventional fixed telephone lines of 55.45 million. With a portable telephone capable of accessing Internet, a user can conduct mobile banking, monitor the news, and so on. Thus, such phones have become established as one of the three core tools for businesspersons. NTT DoCoMo's i-mode has hugely boosted the number of portable telephone subscribers; in just over one year after the start of service, the

company had signed up more than 5 million contracts as of March 2000.

This explosive increase was assisted by the introduction of a wide variety of services. As of the end of March 2000, the total number of service menus (both recognized and not recognized by DoCoMo) has reached 7,000. (Source: Morning edition of Nihon Keizai Shimbun, March 17, 2000, page 13).

Database service providers are releasing content in the information distribution market centered on portable telephones as a way of attracting specific groups of users. Given the small screen size, news flashes are particularly suitable, so major newspaper companies such as Yomiuri and Mainichi have begun providing news bulletins, news flashes in English and sports news, simultaneously with the start of the i-mode service.

Similarly, TOKYO SHOKO RESEARCH (TSR) and TEIKOKU DATABANK (TDB) are providing company information via portable telephones for businesspersons and investors.

The monthly charge for fee-based content is quite low, ranging from ¥100 to ¥300. Taking DoCoMo as an example, the company provides a service of collecting fees on behalf of information providers, and remits the amount to the service providers after deducting a handling charge. Information service providers are thus freed from the cumbersome task of collecting micropayments.

3. Developments by Government Agencies Related to Databases

3.1 Building an Electronic Government Infrastructure

The Japanese government drew up its "Basic Plan for Promoting Administrative Informatization " (by a Cabinet decision in December 1997) with the aim of realizing an electronic government early in the 21st century. This plan calls for the following: a) Provision of administrative information electronically, electronic handling of applications and notifications, and achievement of one-stop-service; b) Review and systematization of internal administrative processes and development of an overall system for the control and distribution of documents; and c) Preparation of network infrastructure among administrative units and between administrative units and the private sector. These tasks are being addressed in an integrated, systematic manner.

Furthermore, in the "Millennium Project" (decision by the Prime Minister in December 1999), the specific goal of creating an electronic government was established. The objective is to "build an electronic government infrastructure that enables users to utilize the Internet, in a paperless manner for handling administrative procedures, from the private sector to the government administration, and from the government administration to the private sector, by fiscal 2003." The responsibilities of the ministries and agencies in implementing various measures have been defined, and specific deadlines have been set.

3.2 Moves Related to Implementation of the Administrative Information Access Law [Information Disclosure Law]

On May 7, 1999, the Law Concerning Access to Information Held by Administrative Organs (hereafter referred to as the "Information Disclosure Law") was passed by the National Diet, and it was publicly promulgated on May 14, 1999. The law will take effect on April 1, 2001.

Preparations are being carried out as follows under the guidance of the Preparatory Office for the Implementation of the Information Disclosure Law at the Management and Coordination Agency.

[1] Preparations to set up an administrative information access review committee

[2] Preparations to set up a general information office regarding requests for public access to administrative information

[3] Public relations on the system for public access to administrative information

All government ministries and agencies are required to define "guidelines for the management of administrative documents," and will be required to classify documents by file based upon these guidelines. They will also draw up ledgers for managing administrative document files and build databases.

3.3 Reform of the System of Delivering Books to the National Diet Library

The book delivery system requires every publisher to deliver copies of their publications to the national government, so that a comprehensive collection of all books and publications that are published in a given country can be maintained. While there are some differences such as the number of copies required and the institution to which the books are to be delivered due to differences in the publishing industry, culture, and history, this type of system is adopted in many countries worldwide.

In Japan, a set number of copies of all publications published in Japan must be delivered to the National Diet Library. Under existing regulations, publications include books, pamphlets, periodicals such as newspapers and magazines, musical scores, maps, and audio records.

With the rapid development of information technology in recent years, the publishing world that used to be dominated by printed materials such as books, magazines and newspapers is changing. There has been a big increase in the volume of "packaged electronic publication" where information is recorded electro-magnetically in a physical medium such as CD-ROM, DVD, floppy disk, or videocassette. In response, the National Diet Library Law was revised to include such "packaged electronic publications" in the book delivery system on March 31, 2000 in the ordinary session of the Diet that started in January, and the law is set to take effect on October 1, 2000.

II. Trends in the Database Service Market

1. Size of the Database Market

According to "Survey of Selected Service Industries" by the Ministry of International Trade and Industry (MITI), businesses in the information services industry include "Software development and programming", "Online and offline data processing services", "Facility management services", and "Database services".

Sales for the entire information services industry totaled ¥9.8006 trillion (about $74.93 billion), which represents a solid increase of 29.2% from the previous year (Table II-1). The sales for this industry reached a peak in 1992, and continued falling until 1994. But it grew significantly in 1996, and steadily expanded in 1997, when sales of software development and programming exceeded 60% of the total. With the expansion of this category, the industry recorded dramatic growth in 1998.

While total sales have posted new highs, the number of firms has also increased significantly from 6,092 in 1997 to 8,248 in 1998 (35.4% up from the previous year), though the sales per firm declined slightly from 1997. In the "Statistics on the Dynamics of Selected Service Industries", there was no quarterly growth in sales in 1999 on a year-on-year basis, and the DI (diffusion index, which forecasts future sales) has slowed from an upward trend to a stagnant trend. Thus, the growth rate of the market size is slowing.

Regarding database services, total sales reached a peak of ¥216.0 billion in 1991, then declined for four consecutive years. After registering growth in 1996, the sales increased for three consecutive years, setting a record sales of ¥291.0 billion (about $2.22 billion) in 1998 (Fig. II-1). However, as noted above, the number of firms covered by the survey increased substantially in 1998, so sales per establishment declined and no simple year-on-year comparison can be made. Also, as shown in Table II-1, the component ratio of sales of database services declined from 3.4% in 1997 to 3.0% in 1998. Sales of continuing firms in the Selected Services Statistics recorded a decrease of 13.4% from the previous year. While a year-on-year comparison of quarterly sales began to show a decline in the Selected Services Statistics (which gives an advance indicator) starting in the latter half of 1998, forecast DI turned upward in 1999, so there are some positive signs.

Table II-2 shows online and offline sales of database services, both of which have grown significantly since 1996. As stated above, the number of firms increased significantly, which makes the future prospects and progress of database services somewhat unclear.

Table II-1 Annual Sales by Various Information Service Sectors

Classification	1997			1998		
	Annual sales (¥100 million)	Ratio (%)	Change from the previous year (%)	Annual sales (¥100 million)	Ratio (%)	Change from the previous year (%)
Total	75,880	100.0	106.2	98,006	100.0	129.2
On-line and off-line processing	10,418	13.7	99.0	11,837	12.1	113.6
Software development and programming	46,685	61.5	109.6	60,253	61.5	129.1
Key punching and data entry	1,732	2.3	91.8	2,179	2.2	125.8
Machine time sales	443	0.6	101.4	614	0.6	138.6
Facility management services	4,267	5.6	107.8	6,885	7.0	161.4
Database services	2,578	3.4	109.5	2,910	3.0	112.9
Various types of research	2,666	3.5	107.1	3,458	3.5	129.7
Miscellaneous services	7,090	9.3	98.5	9,869	10.1	139.2

Source: "Survey of Selected Service Industries," MITI

Table II-2. Changes in Sales of Database Services: Online and Offline

(¥1 million)

Year	Total	Online	Offline
1994	198,839 (377)	150,671 (242)	48,168 (228)
1995	197,291 (336)	149,190 (215)	48,101 (199)
1996	235,439 (378)	178,939 (252)	56,500 (218)
1997	257,799 (383)	189,655 (259)	68,143 (217)
1998	291,043 (560)	213,679 (361)	77,365 (338)

Note: The figures in the lower row show the number of firms.

Source: "Survey of Selected Service Industries.", MITI

2. Distribution of Commercial Databases

2.1 Number of Databases that Can Be Used and Number of Participating Firms

The "Database Directory," which has been published annually by MITI since FY1982, has indexes by field, method of supply, and service firms, and provides a directory of commercial databases available in Japan.

Entries are based upon data submitted by the firms. In 1998 a total of 197 companies reported. After reaching a peak in FY1992, the number of reporting companies declined. In 1998, the number increased from the year before. As for the breakdown of firms, the three categories of producers/distributors (55 companies), producer companies (44 companies), and information search agencies (31 companies) account for two-thirds of the total. Producer companies have increased, while information search agencies have declined.

The total number of commercial databases available in Japan is 2,478, which is a decrease of 4.6%, even though the number of reporting firms increased from the previous year. The number of databases increasing steadily from 1982, but then declined in both 1997 and 1998, and the level is now barely above that in 1990 (Fig. II-2).

Looking at the trends in the number of databases by country of origin, the number of databases produced overseas had dropped sharply recently (a decrease of 38% in FY1997 and a decrease of 7.7% in FY1998 from the year before), which has contributed to the overall decline. Thus, the past situation in which overseas databases comprised two-thirds of all databases available has changed dramatically, and now the component ratios of overseas and domestic databases are roughly the same.

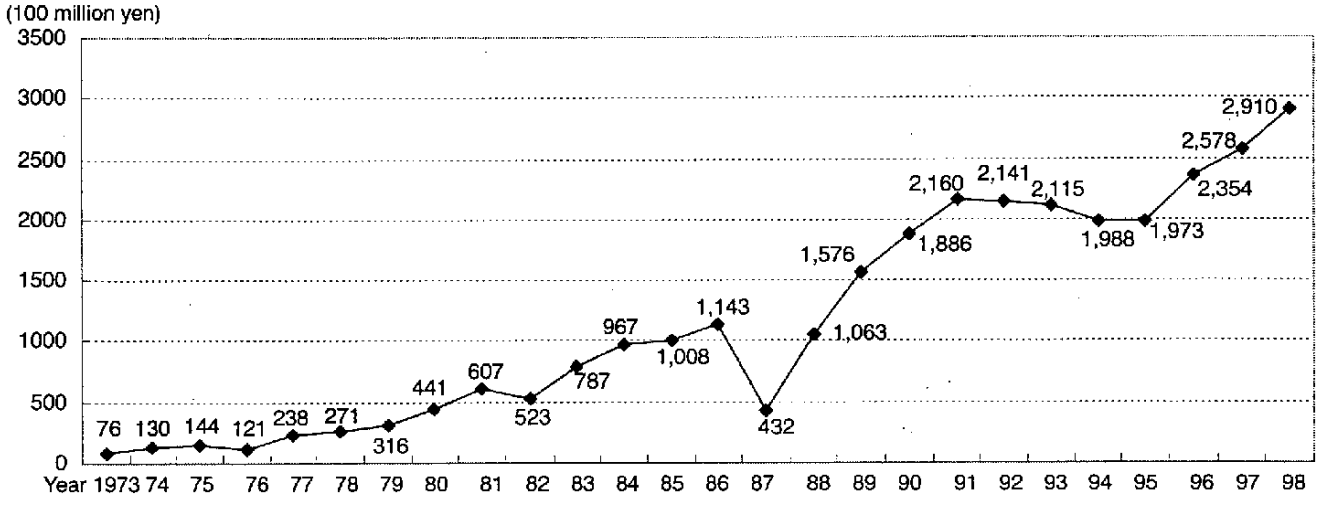
2.2 Distribution by Field

Regarding the number of databases that can be used in various fields in Table II-3, there were 807 in the general field (a decrease of 8.0% from the previous year), 647 databases in natural science and technology (a decrease of 6.2%), 101 in social sciences and humanities (an increase of 1.0%) and 867 databases in the business field (a decrease of 0.9%), and there were 56 databases in the "other" category. Thus, except for the social sciences and humanities and the "other" category, there were decreases in other fields. In recent years, the component ratio of the business field had decreased while that of the general field had increased, but in 1998, there was a large decline in the number of databases in the general field while the business field returned to its lead position.

Also, the subcategories of "newspapers, journals, and news" and "who's who/organizations" in the general field are most often used in business, and so if these subcategories are added to the business field, then the ratio of the business field becomes 53.3% of the total.

The number of databases used most often in terms of subcategory are: "newspaper, journals,

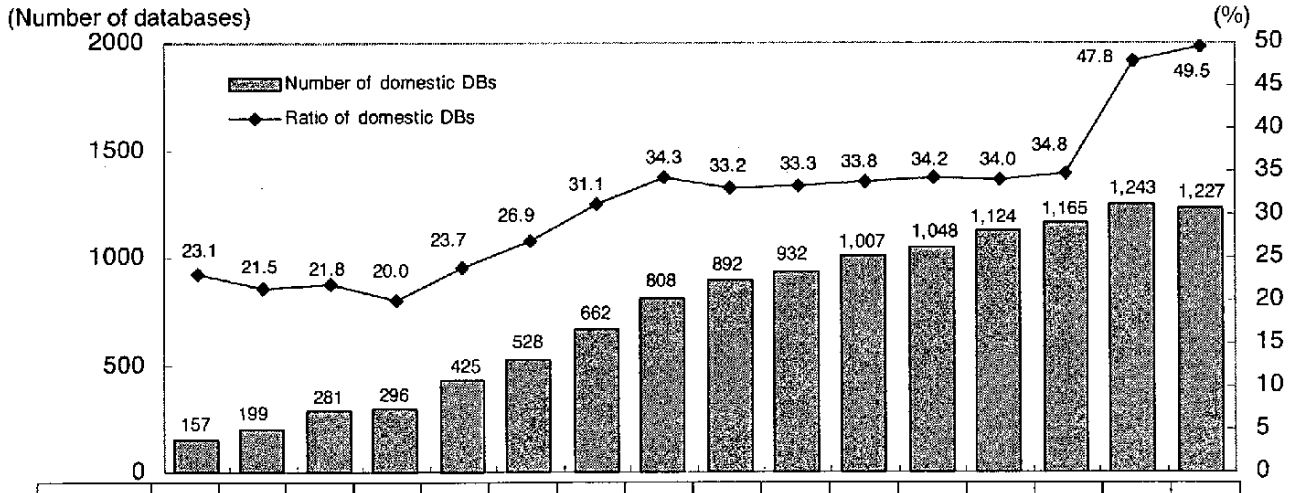
and news" (15.7%), "medicine, pharmaceuticals, life science, and biology" (7.5%), "finance, securities and foreign exchange" (6.7%), "corporate finance and profiles (overseas)" (6.5%), "patents" (4.8%), "economy (Japan)" (4.8%), "(business) general" (4.7%), and "marketing and products" (3.9%).



Note: The business classification was partly revised in FY1987, and "Information supply service" was renamed as "Database services."

Source: "Survey of Selected Service Industries," MITI

Fig. II-1. Changes in Annual Sales of Database Service Industry



Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Actual number of DBs	679	924	1,289	1,483	1,795	1,964	2,128	2,354	2,686	2,799	2,980	3,061	3,308	3,350	2,598	2,478
Number of reporting companies	58	75	100	121	137	194	211	213	222	228	203	201	187	176	193	197

Note: The actual number of DBs in the table includes those databases created overseas. The graph shows the ratio of domestic DBs based upon the actual number of databases.

Source: "Database Directory," MITI

Fig. II-2. Changes in Number of Databases Accessible in Japan (Actual Numbers)

Table II-3. Trends in Distribution by Category of Databases Accessible in Japan (Actual Numbers)

	Subcategory	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
General	General	62	66	70	69	69	75	82	78	76	62
	Newspapers, journals and news	192	231	287	322	373	412	469	444	393	390
	Who's who/Organizations	58	62	72	68	75	73	82	80	73	65
	Government administration	26	30	39	38	46	48	54	59	46	36
	Laws	65	67	56	63	67	80	76	77	46	49
	Politics	22	32	40	43	46	40	36	34	6	5
	Health and sports	10	9	14	15	27	27	33	35	27	24
	Travel and scheduling	6	8	7	8	9	8	8	8	12	10
	Recreation, leisure and facilities guides	19	31	37	39	49	52	63	64	68	41
	Domestic culture and home life	7	10	9	12	20	24	29	31	45	48
	Dictionary and supplementary files	23	25	31	33	26	30	29	28	24	22
	Place names, maps and addresses	10	13	12	11	7	5	5	8	19	20
	Other	29	37	47	42	57	53	62	55	42	35
	Subtotals	529	621	721	763	871	927	1,028	1,001	877	807
Natural science and technology	General science and technology	60	73	74	73	61	58	68	68	68	62
	Patents	65	75	79	82	93	95	112	137	118	120
	Medicine, pharmaceuticals, biotechnology, biology	129	140	164	164	178	152	196	216	191	185
	Chemistry	94	97	111	101	106	106	121	121	96	77
	Physics	3	6	6	6	7	7	7	7	7	6
	Mathematics	3	4	4	4	3	3	3	3	4	4
	Electricity, electronics and information	81	115	114	130	128	128	134	138	36	39
	Machinery	11	14	16	18	15	19	21	22	14	9
	Construction (civil engineering, architecture)	13	18	17	18	19	18	22	24	18	21
	Space, earth and marine	20	21	22	28	31	32	35	32	12	10
	Nuclear power	3	3	4	4	4	4	8	7	7	5
	Environment and pollution	45	50	46	48	55	51	55	53	21	22
	Energy and resources	24	26	33	41	48	61	62	61	17	17
	Agriculture	12	13	12	13	12	14	14	14	15	13
	Meteorology	13	13	12	12	12	5	4	5	9	7
	Metals and materials	20	32	39	38	38	33	38	38	31	25
	Food	8	9	9	8	12	12	15	13	7	8
	Fibers, lumber and pulp	5	5	5	5	4	4	4	4	5	5
	Other	22	24	28	23	19	17	21	22	14	12
	Subtotals	631	738	795	816	845	819	940	985	690	647

Source: "Database Directory," MITI

	Subcategory	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Social Science and Humanities	General	10	11	8	9	10	6	12	13	12	10
	Education	17	15	12	12	12	10	11	9	5	4
	Sociology	6	8	11	7	7	6	6	7	6	6
	Vital statistics	20	26	28	32	34	39	40	43	50	55
	Law	1	1	2	1	2	2	2	2	4	2
	History and political science	2	2	2	2	4	5	5	6	2	2
	Arts (movies, music)	7	5	9	8	10	8	11	10	6	6
	Psychology	3	3	3	2	2	1	1	1	5	5
	Linguistics	3	2	3	2	2	2	2	2	4	4
	Philosophy	1	1	1	1	1	1	1	1	1	1
	Religion	9	9	8	8	8	7	6	6	1	2
	Other	2	6	6	6	5	7	8	7	4	4
	Subtotals	81	89	93	90	97	94	105	107	100	101
Business	General	62	77	95	93	109	110	105	118	118	116
	Marketing and products	102	109	130	132	120	121	133	139	116	97
	Economy (overseas)	108	71	86	73	71	68	71	70	48	38
	Economy (Japan)	76	82	86	89	87	92	84	79	101	120
	Corporate finance and profiles (overseas)	149	204	238	235	256	267	257	257	165	161
	Corporate finance and profiles (Japan)	66	72	78	88	88	92	82	79	80	87
	Accounting and management	10	10	13	15	16	17	31	29	19	17
	Finance, securities and foreign exchange	140	134	156	156	154	161	168	196	153	166
	Energy industry	38	8	8	15	15	13	17	19	5	4
	Communications and broadcasting	32	27	33	28	38	53	65	62	4	4
	Agriculture, forestry and fisheries	7	10	9	9	5	4	4	4	4	3
	Chemical industry	9	9	10	10	15	13	12	12	10	9
	Labor	8	6	7	6	9	13	13	17	11	12
	Education	-	-	-	-	-	-	-	-	0	0
	Architecture and construction	5	5	6	6	5	5	8	7	3	0
	Transportation	23	16	22	23	27	27	27	26	8	7
	Sales and services	7	7	15	15	15	16	15	13	1	2
	Distribution and real estate	8	10	9	9	7	5	4	5	5	5
	Other	31	39	61	57	69	83	78	71	24	19
	Subtotals	881	896	1,062	1,059	1,106	1,160	1,174	1,203	875	867
Others		6	10	15	71	61	61	61	54	56	56
Grand totals		2,128	2,354	2,686	2,799	2,980	3,061	3,308	3,350	2,598	2,478

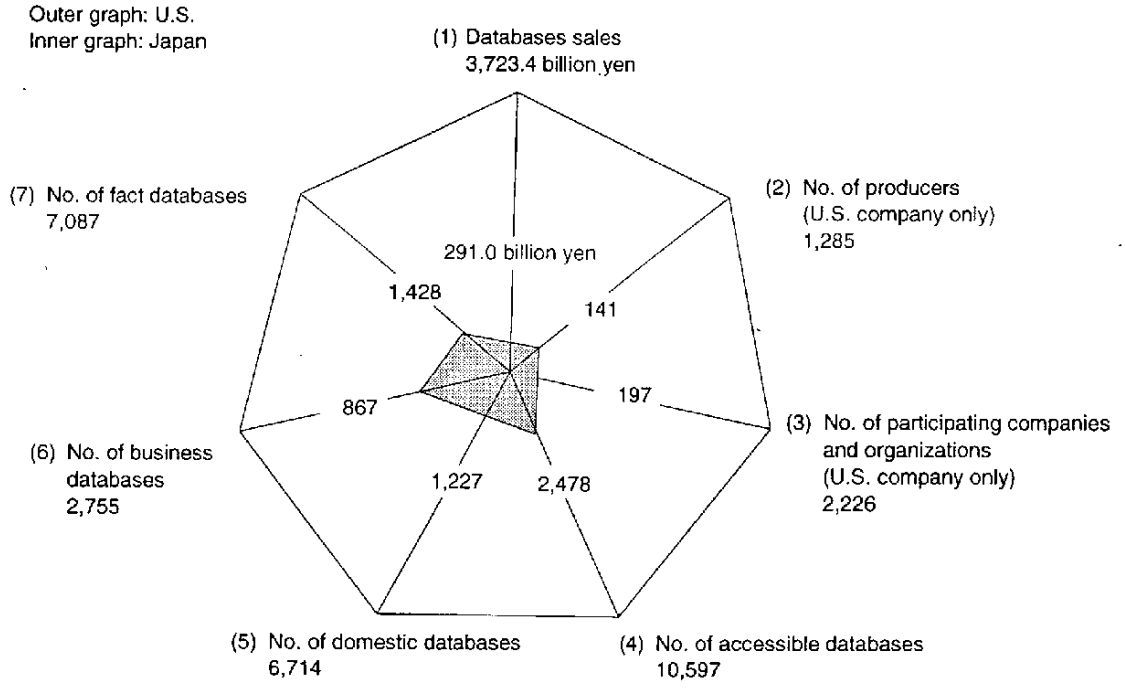
Source: "Database Directory," MITI

3. Comparison of Database Conditions in the United States and Japan

Figure II-3 compares the size of the database industry and market in Japan and the United States. The U.S. is shown on the outside, while Japan is shown on the inside. The comparison is based on the following seven parameters.

(1) Database sales
(2) No. of producers
(3) No. of participating companies and organizations
(4) No. of accessible databases
(5) No. of domestic databases
(6) No. of business databases
(7) No. of fact databases

Items (1) through (3) relate to the state of the database service industry, and are considered to be indicators of the strength of the industry. Items (4) through (7) indicate the distribution status in the respective countries. As shown by Fig. II-3, the United States has overwhelming superiority in both the power of the industry and distribution situation.



Note 1: Database sales of the United States are approximate figures calculated at the rate of ¥130.79 to the dollar based upon data from SIMBA Information Inc. (including the Internet and CD-ROM), and includes both sales to businesses and sales to consumers (including the Internet and CD-ROM). The figures represent worldwide sales of information service businesses based in the United States. Consequently, sales generated by Reuters, Reed Elsevier and so forth are excluded. Data for Japan was taken from the "Survey of Selected Service Industries" (1998 edition).

Note 2: Items (2) through (7) for the United States were compiled based on the paper by Martha E. Williams in the 1999 edition of "Gale Directory of Databases" Vol. 1 (online) and Vol.2 (offline such as CD-ROM). Data for Japan was taken from the "Database Directory" (FY1998 edition).

Note 3: Actual numbers are shown for items (4) through (7).

Fig. II-3. Graphical Comparison of Database Situation in the United States and Japan (1998)

3.1 Comparison of Database Industry Strength

A comparison of the capability of the database industry shows an even larger gap between Japan and the United States than the distribution situation.

First, with regard to the sales revenue of database services, the gap between the two countries has been widening in the past several years due to the high growth rate of the U.S. economy, and this situation continued in 1998, with around a twelve-fold gap. In comparison with 1997, the gap narrowed somewhat in the category of "producers," but the gap is still nearly 10 times. (Table II-4) The gap in the total number of participating companies including producers has not changed from the previous year at 11.3 times. Despite the ups and downs in the number of companies entering and participating in the market in the United States, the number of databases provided there continues to rise. In Japan, however, even though the number of companies entering and participating in the market continues to increase, the number of databases has been declining.

Compared to the U.S. where the database industry has long been firmly established, in the Japanese database industry it is difficult to establish a business exclusively in database services, as is clearly indicated by the large number of companies engaged in more than one business. Although a direct comparison cannot be made due to differences in usage environment, the impact of the economic slowdown, the balance between investment cost and demand, and differences in communication costs, the importance of the widening gap between the two countries cannot be underestimated. Because the widening gap in the contents field is resulting in differences in ability to use information, further promotion of databases in Japan is of critical importance.

3.2 Comparison of the Status of Database Distribution

Although the gap between Japan and United States with respect to distribution is not as large as that for industry strength, the gap in this field has increased from the previous year. As stated earlier, even though the gap in the number of producers and number of companies entering and participating in the market has become small, the gap in the number of databases has increased from 3.7 times to 4.3 times. While the gap in domestically made databases narrowed somewhat in the previous year, the gap in 1998 reverted to the level of 1996. The gaps in the number of business databases and fact databases have widened further, as well.

Table II-4. Strength of the U.S. Database Industry Relative to Japan (1998)
(Japanese database industry = 1)

Criteria	1998 U.S.	1997 U.S.
(1) Database sales	12.8	12.1
(2) No. of producers	9.1	10.3
(3) No. of participating companies and organizations	11.3	11.3
(4) No. of accessible databases	4.3	3.7
(5) No. of domestic databases	5.5	5.0
(6) No. of business databases	3.2	3.0
(7) No. of fact databases	5.0	4.4

Note: Sources and calculation methods are the same as indicated in Fig. II-3.

3.3 Comparison of the Component Ratio of Sales of the Database Industry in Japan and the United States

The total sales of the world's database industry (including package media) in 1998 was $42.28 billion (¥5.5302 trillion), and so Japan's database industry with total sales of $2.22 billion (¥291 billion) accounted for 5.3% of worldwide sales. Put another way, the world's database industry is 19 times as large as that of Japan. In contrast, the United States' database industry with its total sales of $28.47 billion (¥3.7234 trillion) accounts for 67.3% of the world's entire database industry. Its sales are 12.8 times that of Japan.

Table II-5 divides the world's database industry broadly into 8 fields and shows the sales for each field of Web/Online services (except pakage media). Brokerage (related to stock transactions) accounted for $9.34 billion or 27.4% of the total, and enjoyed the largest sales among all categories. This is followed by Marketing with $6.0 billion (17.6%), Financial News/Research with $4.46 billion (13.1%), Credit with $3.77 billion (11.0%), Legal, Tax, and Public Records with $1.75 billion (5.1%), Current Awareness News & Research with $1.7 billion (5.0%), and Verticals (services directed to specific markets) with $870 million (2.6%). These seven fields are used mainly by firms and universities for business purposes.

In addition to these Web/Online services that are directed mainly at business users, there are services directed toward consumers and ordinary households such as America Online (AOL). Web/online services directed toward consumers have been growing rapidly in recent years with total sales of $6.18 billion or 18.1%, which is about the same size as that of "Marketing" of Web/Online services for business users.

Table II-5 also shows estimates of the United States proportion of worldwide sales by category.

Using basically the same categories, estimates were made for the sales of Japan's database industry for 1998 (Table II-5). The figures for the sales of Japan's database industry are based upon interviews made by the Committee for Comparative Study of Database Distribution Structures in

Japan and the United States, and its own studies.

Unlike the sales composition worldwide, much of the database service use in Japan is for "Current awareness, news & research" (30.9%), "Brokerage" (24.1%), "Credit" (15.5%), and "Legal, tax and public records" (10.3%). There are big differences in terms of category.

By sales component ratio, the sales ratio of "current awareness, news & research" in Japan and the world is 1:2.5, so Japan's database industry is doing well in this field. In the case of "Brokerage" which is the second largest in Japan, the world's total is very large at $9.34 billion, which is 17.5 times Japan's total, so there is a large gap here. The ratio of sales total for the third largest category "Credit" is 1:10.9, so this field is also doing well, along with "Legal, tax, and public records," in addition to "Current awareness, news & research."

Table II-5. Comparison of Web/Online Services in Japan and the World

(million dollar)

	World		U.S.		Japan		Comparison (in multiples)
Web/Online services by category	Estimated sales	Sales ratio (%)	Estimated sales	Sales ratio (%)	Estimated sales	Sales ratio (%)	World/Japan
Brokerage	9,343.2	27.4	5,709.0	24.6	535.2	24.1	17.5
Marketing	6,004.0	17.6	3,668.0	15.8	38.2	1.7	157.1
Financial News/Research	4,461.7	13.1	2,726.0	11.7	191.1	8.6	23.3
Credit	3,765.4	11.0	2,301.0	9.9	344.1	15.5	10.9
Legal, Tax and Public Records	1,750.0	5.1	1,069.0	4.6	229.4	10.3	7.6
Current Awareness, News & Research	1,700.4	5.0	1,039.0	4.5	688.1	30.9	2.5
Verticals (services directed to specific markets)	870.0	2.6	532.0	2.3	-	0.0	-
Consumers (ISP)	6,182.9	18.1	6,182.9	26.6	61.2	2.7	101.1
Unknown	-	-	-	-	137.6	6.2	-
Total	34,077.6	100.0	23,226.9	100.0	2,224.9	100.0	15.3

Note 1: Compiled from SIMBA Co.'s Market Review 1999.

Note 2: The sales totals by category are estimates made by the Committee for Comparative Study based upon interviews, etc. The sales totals are based upon the "1998 Survey of Selected Service Industries." Computed on the basis of $1 = ¥130.79.

Note 3: The sales totals are estimates computed from the data provided by SIMBA Co.'s "Market Review 1999."

The estimates for various categories in Table II-5 for Japan include package media such as CD-ROM in addition to online services, but the figures for the world and the United States do not include such sales. Therefore, the actual gap is even larger than shown here.

Comparing Japan with the world, sales of the Japanese industry are particularly weak in the categories of "brokerage," "marketing" and "financial news and research." Looked at from another angle, these fields offer great growth potential.

III. Trends in the Database Service Industry

This chapter outlines the current situation of the database service industry in Japan based upon the tabulated results of the "Survey on the Status of Japanese Database Services (Vendor Edition)" conducted each year by Database Promotion Center, Japan (DPC).

In this survey of October 1999, a questionnaire survey was conducted on the business results of commercial databases provided in FY1998, etc., among 198 companies listed in the "1998 Database Directory." There were valid responses from 121 companies (collection rate of 61.1%).

1. Type of Business of Database Service Companies

According to the findings of this survey on the type of business, in terms of the main type of business of the data service providers, "information processing and information supply services" accounted for 42.1%, followed by "public services" with 23.1%. "Public services" include survey and research agencies and organizations. These two groups are followed by "newspaper and publishing companies" with 19.8%, and "other services directed toward businesses" including think tanks and advertising agencies with 8.3%. While it is numerically small, "manufacturing" and "commerce" accounted for some companies, which indicates that an increasingly broad range of businesses are participating in the database business.

According to the "Database Directory," many firms in the database service industry in Japan are both producers and distributors (this type accounted for 27.9% of the total in FY1998). These firms are engaged in all operations, from database production to processing, operation, and supply, all on an in-house basis. If firms that act as producers only, which account for 22.3%, are added, these two types comprise about one half of the total. Companies acting as information brokers are ranked third with 15.7%. Many users regard search functions that enable users to find the desired information from the huge number of databases as important, but this category declined by 4 points from 19.7% in FY1997. This may be due to the improvement in search functions of computers and improvement in networks, which enable end-users to do more searching directly on their own. Partly in response to the continuing economic slowdown, many companies have tried to curb such requests to outside services.

2. Defining the Position of Databases

Database service companies covering multiple business types were questioned about the importance of their database business to their companies (Fig. III-1). 41.2% replied that it is currently their "major business," while 52.1% replied that it would be their "major business in the future." Thus, only a small increase from the present is expected. In the previous survey (October

1998), the figures were 45.4% (major business now) and 52.8% (in the future). In the present survey the figures for main business were lower, so the range of increase for the future is that much larger. Nevertheless, the figures for both were lower this time, although the decrease was slight over the years.

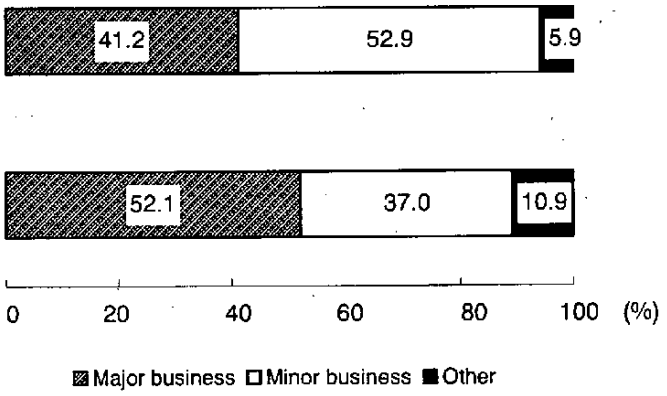


Fig. III-1. Positioning of Database Business

This decline may be due to the difficulties that firms are having in clearly estimating the future direction of society and the economy, or due to the database business itself. In recent years, enthusiasm for the database service business has undoubtedly waned.

3. Sales of Database Services

3.1 Ratio of Sales of Database Business to Company's Gross Sales

If the main business referred to above is an index for subjectively assessing how database business operators regard the future prospects for the business, then the sales ratio is an important index for objectively assessing the present situation.

As shown in Fig. III-2, the ratio of database service sales to total sales is 26.4% on average, which is the same as in the previous survey. Regarding database sales ratios, the most frequent reply was "less than 1%" given by 27.9%, followed by "15-50%" at 17.4%, "1-5%" at 11.6%, and "10-15%" and "more than 90%" with 10.5% each. The total number of companies citing a database sales ratio of less than 10% of gross sales accounted for 48.8%, which is a slight increase of 0.2 points from the previous survey. There was thus no significant change in the component ratio.

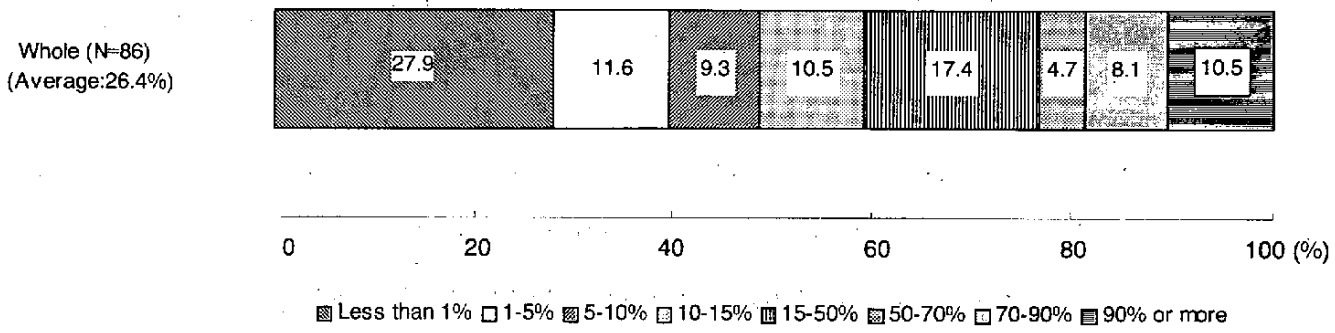


Fig. III-2. Distribution of Ratio of Database Sales to Company's Gross Sales

3.2 Ratio of Domestic and Overseas Database Sales to Total Sales

The ratio of sales of domestic databases to total database sales was 87.8%, which is about the same as in the previous survey (88.6%) (Fig. III-3). The average for databases sales produced overseas is 12.2%, with 76.8% of vendors with a sales ratio of "less than 10%." There is thus a great deal of variation, with a limited number accounting for much of the sales of overseas produced databases. Since the survey was started in 1988, the ratio of sales of domestic databases has almost consistently remained above 85%. It is clear that domestic databases are the major source of sales for those companies recorded in the "Database Directory." As distinct from the demand for databases produced overseas, the demand for domestic databases is steadily growing, so there is good potential if new service menus can be made attractive.

3.3 Database Sales Ratio by Form of Supply

As shown in Fig. III-4, sales of domestic online database services have been around 50% in the last few years, but the figure declined sharply from 49.6% last year to 32.1% this year. This is mainly because online searches by the Internet (17.3%) were set up as a new category and separated from the online category. On the other hand, "CD-ROM" accounted for 20.9%, a slight increase of 0.6 points from the year before. While this is not a dramatic increase as seen before, it has maintained this 20% level.

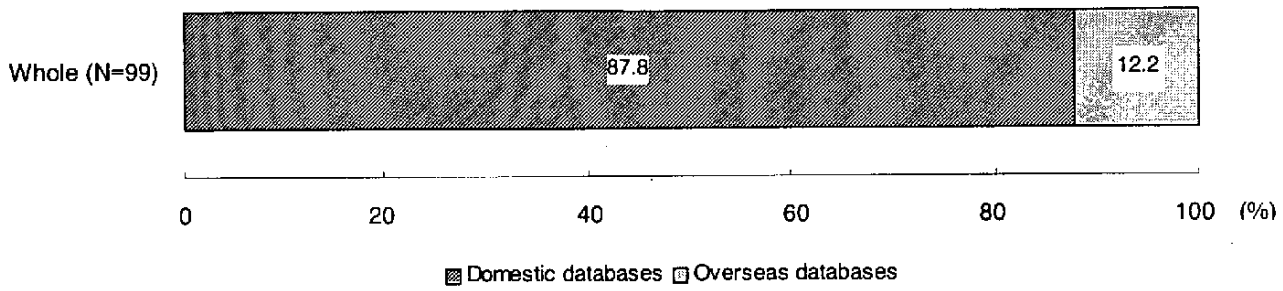


Fig. III-3. Ratio of Database Sales (Domestic and Overseas)

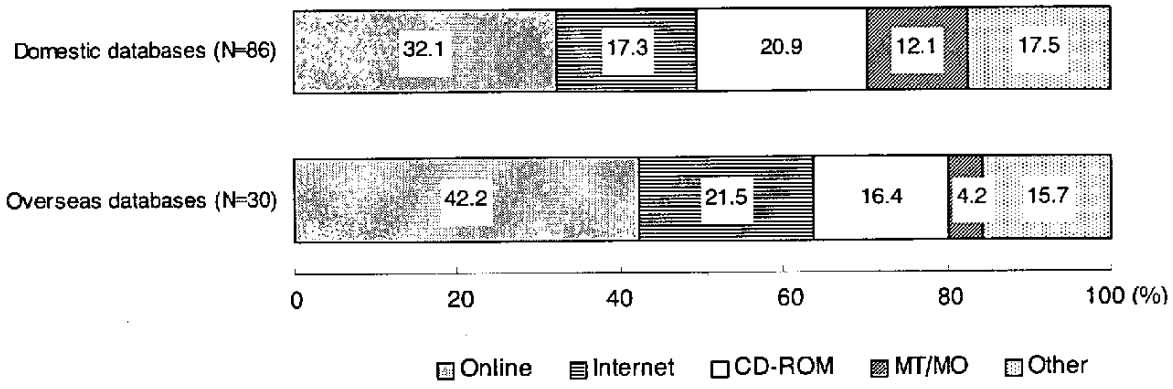


Fig. III-4. Ratio of Database Sales by Supply Form

3.4 Year-on-Year Change of Database Sales

The average growth rate of database sales as compared with the previous year among 89 responding companies was 12.2% (Fig. III-5). This is a slower growth rate compared to 16.3% in the previous year's survey, when the slowdown in growth appeared to have turned a corner. But the findings of this survey indicate that database businesses have not been shielded from the effects of the recession.

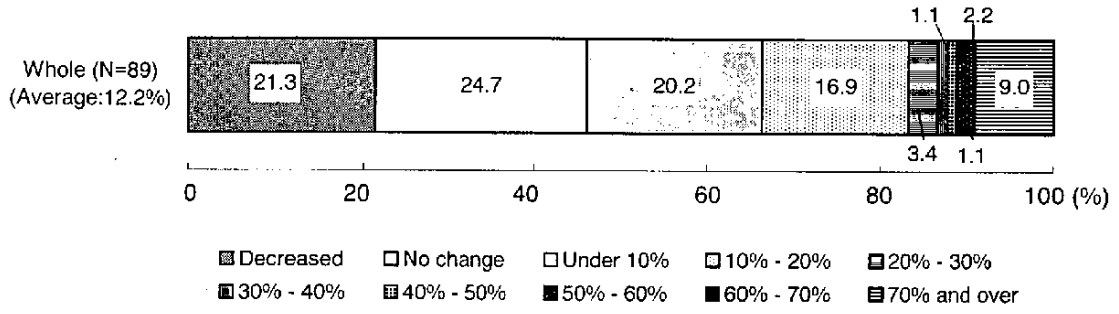


Fig. III-5. Distribution of Year-on-Year Changes in Database Sales

3.5 Forecast of Average Annual Growth Rate of Database Sales for the Next 5 Years (Company level)

We asked companies to forecast database sales growth for the next five years. The average for 94 responding companies was 15.5% (Fig. III-6). This is only a slight decrease of 0.1 points from the previous survey, indicating that many vendors expect strong growth in the future.

Looking at the distribution of average growth rate, 29.8% or nearly one-third of firms expects a stable growth rate of "under 10%," and these companies comprise the largest group. Excluding those who expect a decrease or no change, 69.1% of the responding companies expect "growth," but this is 8.7 points lower than the 77.8% in the previous survey who gave this response. This weakening optimism of firms may reflect the continuing sluggish economy.

3.6 Forecast of Average Annual Growth Rate of Database Sales for the Next 5 Years (Industry level)

In this part of the survey, companies were asked to forecast the growth rate of database sales for the industry overall. The average of 87 responding companies was 21.6%, which is an increase of 3.5 points from the previous survey (Fig. III-7).

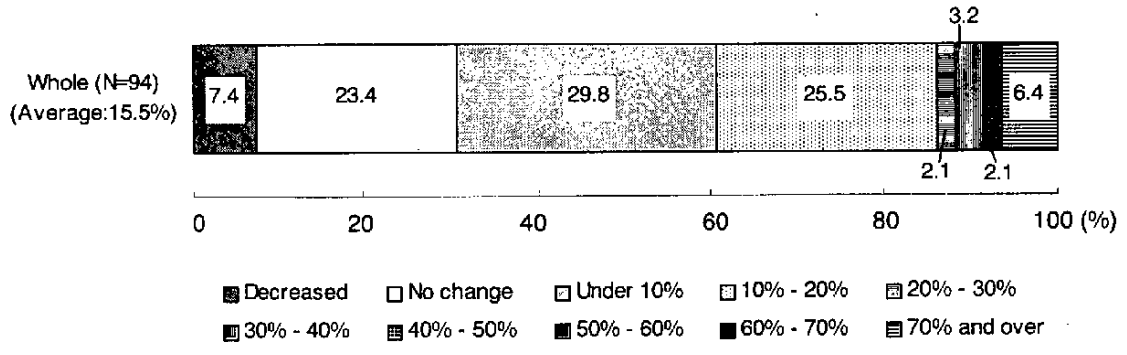


Fig. III-6. Forecast of Average Annual Growth Rate of Database Sales for the Next 5 Years (Company level)

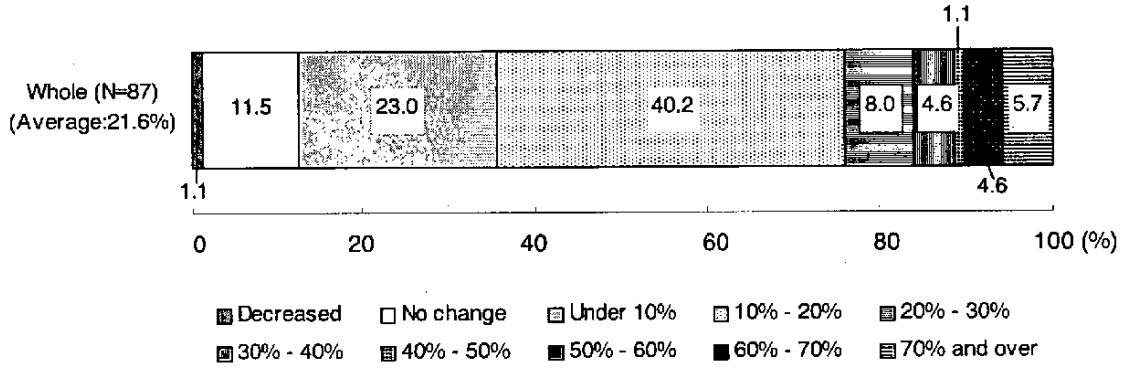


Fig. III-7. Forecast of Average Annual Growth Rate of Database Sales for the Next 5 Years (Industry level)

4. Media with High Expectations

This section describes various forms of media (by which databases are supplied) that are expected to grow fastest over the next five years, and analyzes the responses relating to the expected growth rate.

4.1 Media with the Highest Expectations

The database supply medium that is expected to show the largest growth in the next five years is the Internet, which has grown rapidly in the past few years. This time, 95.4% of the responding companies mentioned it (Fig. III-8). This is followed by "personal-use portable information devices" (including portable telephones, mobile computers, PDAs, etc.) with 48.6%, which is an increase of more than 20 points from the previous year. New portable telephone services with

access to the Internet were started in 1999 such as i-mode and EZ Web. These offer a rich variety of services for business users and consumers at large, and there has been a big increase in the number of companies which expect with these new services. CD-ROM, on the other hand, fell from 40.9% in previous survey to 28.4%, to take the third position.

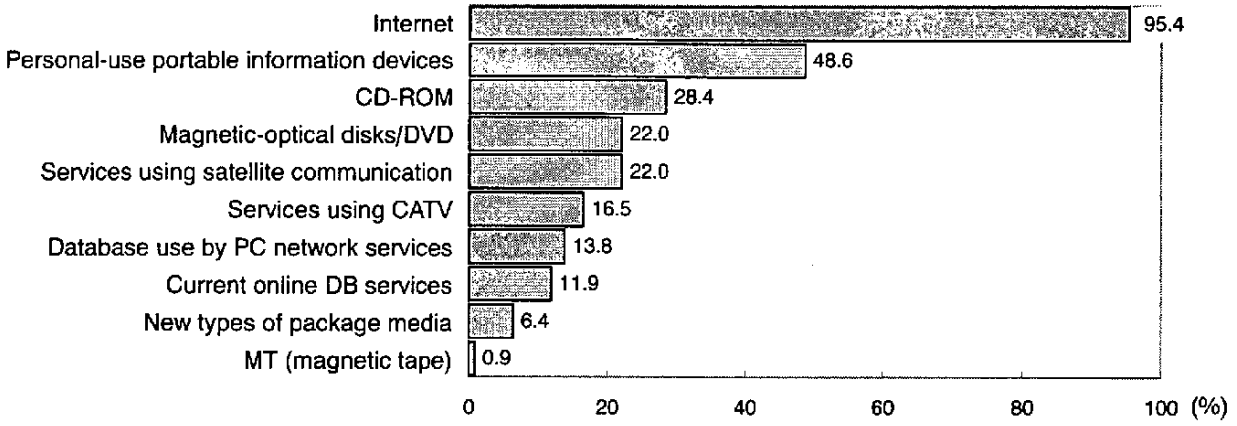


Fig. III-8. Media With the Highest Expectations for the Next 5 Years (N=109; multiple replies accepted)

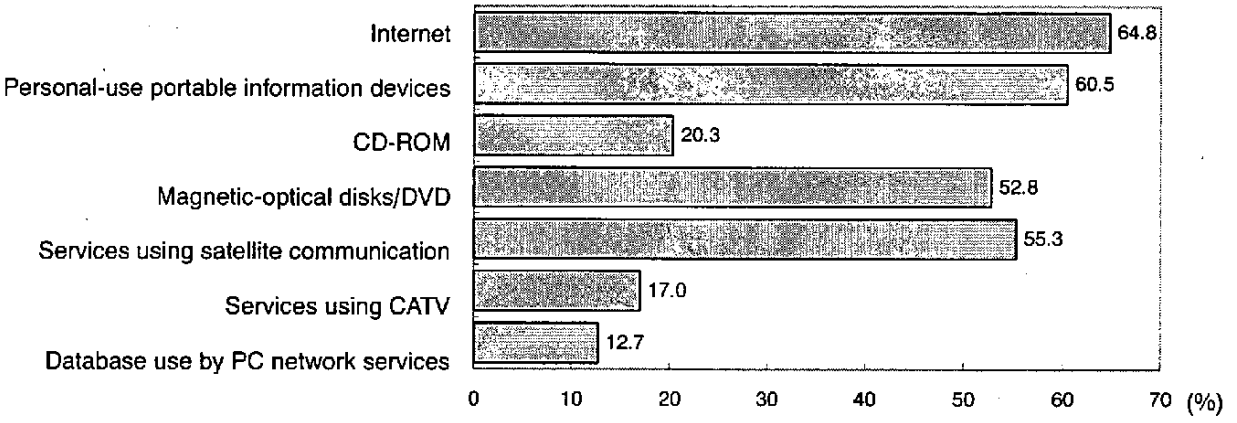


Fig. III-9. Forecast of Annual Average Growth Rate of Media Expected to Demonstrate the Highest Growth Rate for the Next 5 Years

4.2 Forecast of Growth Rates

Regarding the average annual growth rate of media with the highest expectation for growth (Fig. III-9), the highest expected growth rate is for online service media such as the Internet, followed by "personal-use information devices," "services using satellite communication," and "electronic-optical disks (MO), DVD," in that order.

4.3 Promising Supply Types of Data

Although only 22 companies responded to this question, about 50 items data types were mentioned. The one that was most often mentioned was "text data" (40.0%), followed by "image data" (26.0%), "multimedia" (18.0%) and "numerical data" (14.0%), in that order.

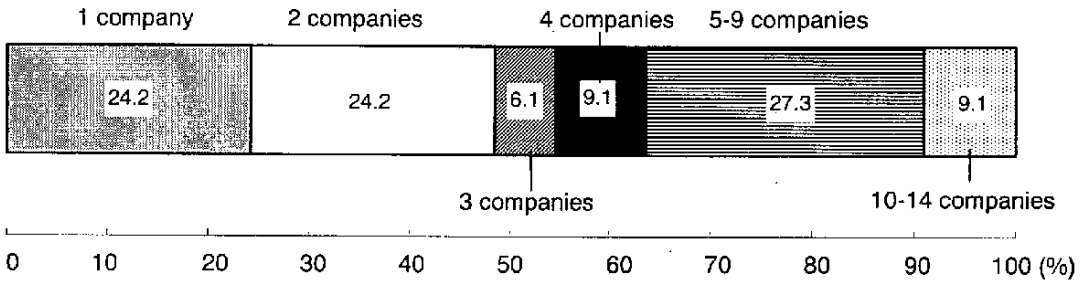
5. Future Concern

With regard to factors that are sources of concern for the development of the database business in the future, 59.5% of 116 responding companies mentioned "concerned about protection of copyright for databases (intellectual property)," following the pattern seen in the previous survey. This was followed by concern about "an increase in the supply of database services free of charge through websites, which will impact the database business" (51.7%). There was also again major concern about "public agencies exerting downward pressure on the private database service business by providing collected data and information to the public free of charge" (42.2%). "Concern about security such as illegal access from outside and virus damage," which was a new item added this year, was cited by a very high ratio of 41.4% of the responding companies, making this the fourth-ranking item. This was followed by "difficulty to foresee how the Internet will develop in the future" and "intensified competition with new entries in the market as part of globalization," with 39.0% each.

6. Distribution of Databases

86.1% of 79 producer companies that responded to this survey "provide database services on their own," while 41.8% are "outsourcing distribution to other companies." As these figures show, many of the producers of databases in Japan also act as their own distributors.

For the companies that rely on other companies for data services, the average number of companies they request to supply data services increased to 4.0 companies (from 3.3 companies in the previous survey). Regarding the distribution, the largest group (27.3%) request "more than 5 but less than 10 companies," replacing "1 company" in the previous survey. This served to raise the average overall (Fig. III-10).



Average number of companies requested to supply data services: 4.0 companies

Fig. III-10 Number of Distributors that Producers Request to Provide Data Services (N=33)

7. Problems in Database Construction

The database service providers were asked about problems they encounter in building databases, and Fig. III-11 shows their responses. The awareness of problems related to high-cost continues to rank high, and is related to the top four items in their responses. Producers are acutely aware of the financial viability of building a new database: "cannot project a balance between revenues and expenses" and "difficulty in recovering the initial investment." The key question is: will the new databases be profitable? "High maintenance" ranks second year after year, so the initial investment and high maintenance cost threaten the economic feasibility of the business itself.

However, the overall ratio of problems related to cost has declined from the previous survey, giving way to a new concern, namely, "measures related to security." In recent years, there have been frequent cases of damage resulting from computer viruses and illegal access, so there is heightened awareness and concern among vendors about the security of information and the IT environment.

A particularly notable feature in the survey was the increase in concern about "shortage of qualified personnel" such as indexers and programmers. In particular, the shortage of "personnel creating data such as indexers" was mentioned by 14.3%, a jump of more than 10 points from 4.2% in the previous survey. "Shortage of programmers," which was a new item in this survey, was selected by 10.7%. Thus, after cost, the question of "qualified personnel" is of great concern. Similarly, "insufficient government subsidies" and "insufficient standardization" increased by 6.5 points and 2.4 points respectively from the previous year, so vendors are becoming concerned about areas other than cost.

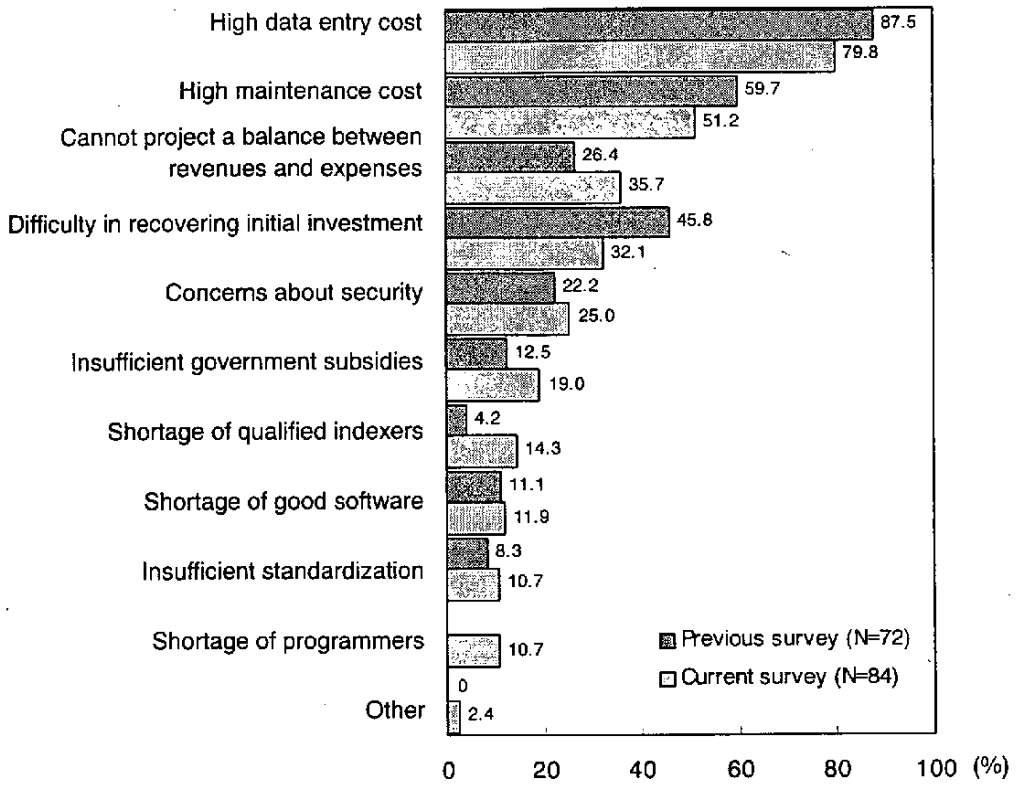


Fig. III-11 Awareness of Problems in Database Construction (Multiple replies)

8. Utilization of Public Data

Public data refers to statistical data and documentary information (white papers, council reports, laws and ordinances, etc.) produced and published by government agencies and other public organizations. Public data is considered to be highly reliable and has become a very important source of information. 50.0% of 82 responding companies said that they "make use" of such public data. By business type, 58.6% of 29 producers that concurrently serve as distributor companies "make use." In contrast, 54.3% of 35 producer companies that are mainly engaged in producing databases themselves said that they "do not use" public data.

As for the reasons for use, the item "data is highly reliable" rose further by 7.1 points to 65.0%, overwhelming all other reasons (Fig. III-12). "Is updated every year or regularly" and "high user needs" came in second with 37.5% each. This was followed by "difficult to grasp such data independently" with 35.0% (although this is a decrease of 7.1 points from the previous year).

What kinds of public data are databases businesses using? In the area of text data drawn up in characters, "Kanpo (public gazette)" continues to rank top (at 30%), followed by "Patents," which shows the increased need for this type of information (Fig. III-13).

Also, in terms of numerical data, "general business and industry" (32.5%) overtook "population,

employment and labor" to rank top by a small margin, as shown in Fig. III-14. Items related to the economy changed places. "Related to business companies," which grew dramatically last time, maintained a high level (27.5%).

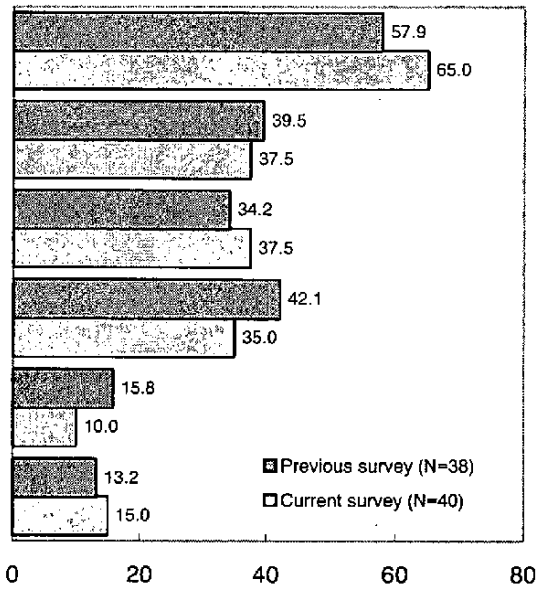


Fig. III-12. Reasons for Use of Public Data (Multiple replies)

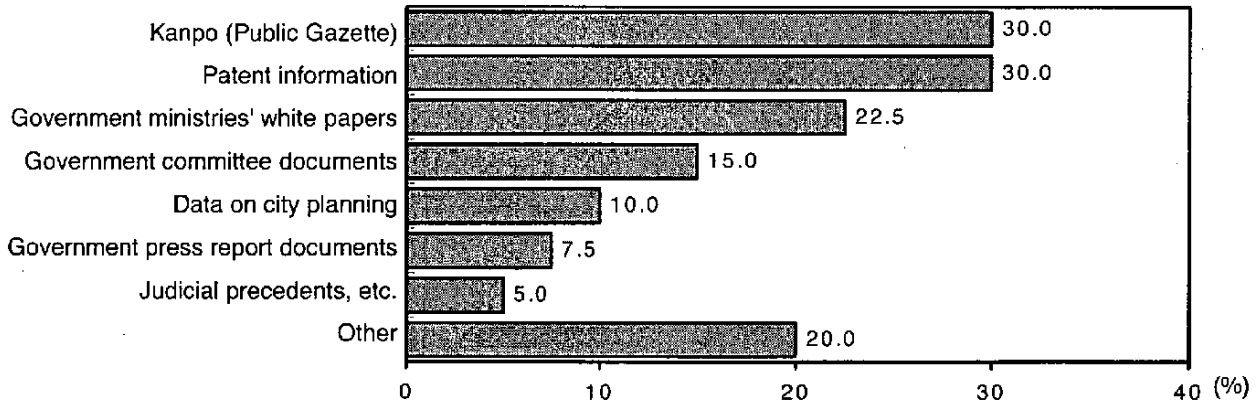


Fig. III-13 Types of Public Data Used Now [Text Data] (N=40; multiple replies)

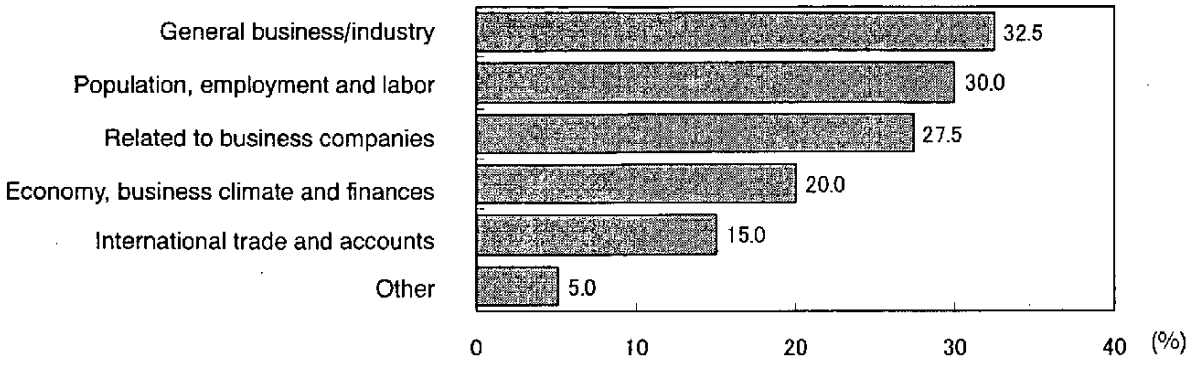


Fig. III-14 Types of Public Data Used Now [Numerical Data] (N=40; multiple replies)

9. Types of Data Supplied in Databases (Text, Image, Video, etc.)

9.1 Data Being Supplied

As shown in Fig. III-15, by far the most common type of data currently being supplied online is "text data" (91.9%), followed by "numerical data" (41.9%) and "image data (still pictures, and photographs)" (38.7%). In comparison with the previous survey, the greatest increase was seen for "software" which grew by 6.0 points. On the other hand, "numerical data" fell by 11.5 points.

The rank order for data provided offline is the same: "text data" (79.4%), "numerical data" (48.5%), and "image data (still pictures and photographs)" (44.1%).

9.2 Data Scheduled to be Supplied in the Future

When the responding companies were asked what types of data that they wish to provide or increase in the future, "text data," "image data (still pictures and photographs)" and "numerical data" accounted for the bulk of the responses for both online and offline services (Fig. III-16). In comparison with the previous survey, "Image data (still pictures and photographs)" which was at the top last time came in second after "text data," but the difference between the two is very small. Thus, changes are occurring in line with changes in the database fields and user strata.

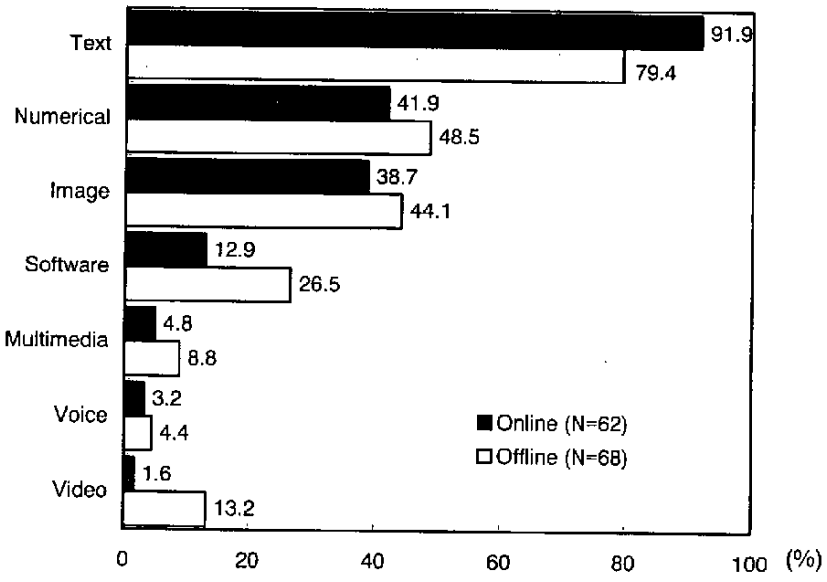


Fig. III-15. Types of Data that Respondents Provide Currently (multiple replies)

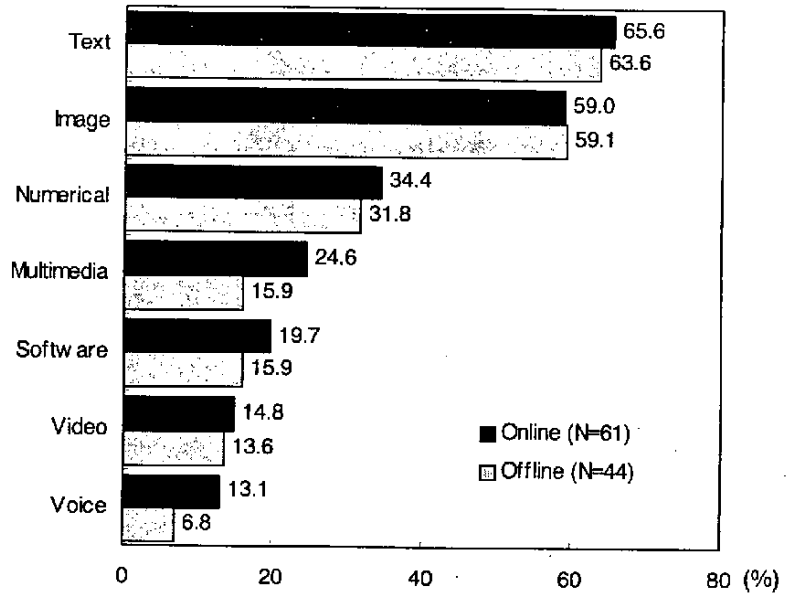


Fig. III-16. Types of Data that Respondents Wish to Provide in the Future (multiple replies)

9.3 Positioning of Multimedia

What are the views on multimedia? As shown by Fig. III-17, 23.1% of 13 responding companies think that multimedia services are "a major service," which is a significant increase from 14.3% in the previous survey. Of course, this year's figure is only half that (54.5%) of the survey before last, but because only a few companies responded, clear pronouncements cannot be made. The number of companies that replied that it is "a secondary service" declined from 42.9% in the previous survey to 38.5%.

Overall, there is no significant change in vendors' positioning of this type of service nor intentions to provide such services from the previous year. Thus, vendors are carefully analyzing its cost effectiveness, user needs, development cost, and overall business profitability.

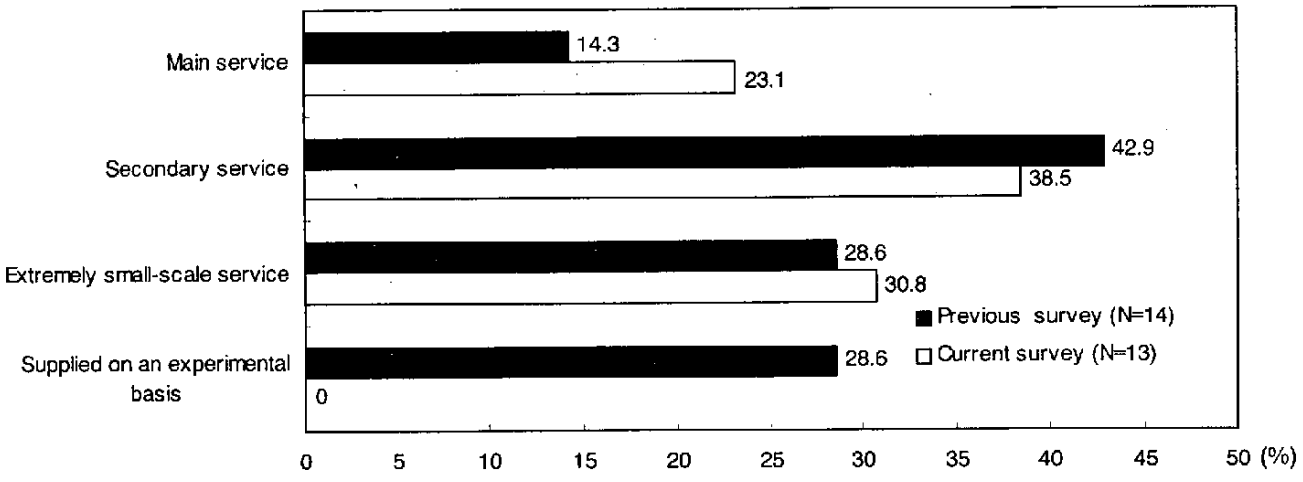


Fig. III-17. Positioning of Multimedia Services (multiple replies)

10. Status of Provision of Service on the Internet

As Fig. III-18 shows, 59.8% of 97 responding companies are "providing" services via the Internet. In the previous strvey, 43.5% were providing such services, so there has been a dramatic increase of 16.3 points, and the total easily exceeds the 50% mark. Vendors have thus begun to make strategic use of the Internet for their business. When those companies that are "planning to use" the Internet (16.5%) are included, three-fourths of vendors will be providing database services via the Internet in the near future.

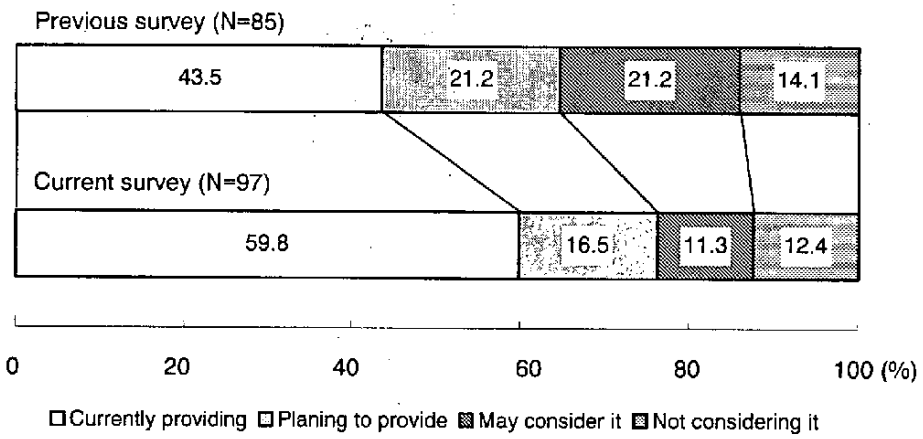


Fig. III-18. Provision of Database Services via the Internet

Thus, given the big trends in the IT environment, use of the Internet as a means for database services is inevhtable. The quality of content and supply form that could make good use of adantages of the Internet, are likely to determine the outcome of market competition in the future.

As noted above, now that nearly 60% of vendors provide database services via the Internet, there are many concerns related to the Internet. When 58 vendor companies that currently provide database services via the Internet were asked about their concerns and problems, the largest number of 51.7% mentioned "concerns about security such as illegal access from outside." This replaced concern that "the method of protecting the copyright is not well established" (43.1%) as the top ranking item (Fig. III-19). Recent incidents involving computer viruses and hacker damage, as well as widespread coverage in the media, appear to have had much influence.

Comparing the responses given by those firms that "are providing" database services via the Internet and those that are "planning" to do so, the greatest gap was seen in "speed too slow due to volume capacity," with a gap of 24 points. It is worthy of notice that nearly half of those firms that are providing services via the Internet selected this item based upon their actual experience. Another item with a big gap between the two groups was "change is too rapid: difficult to grasp good timing."

For those vendors who "are planning/considering" it, the pace of change related to the content of database services, circuits, multimedia development, hardware capacity, and so forth is just too fast for them to make an decision on whether to launch a new service. There is also a big gap for "collection of charges is cumbersome" which ranks 4th among firms that are already providing services via the Internet. For a company that seeks to provide services over the Internet to many unknown users, unlike the membership-based PC networks, collection of charges is a key problem that must be resolved.

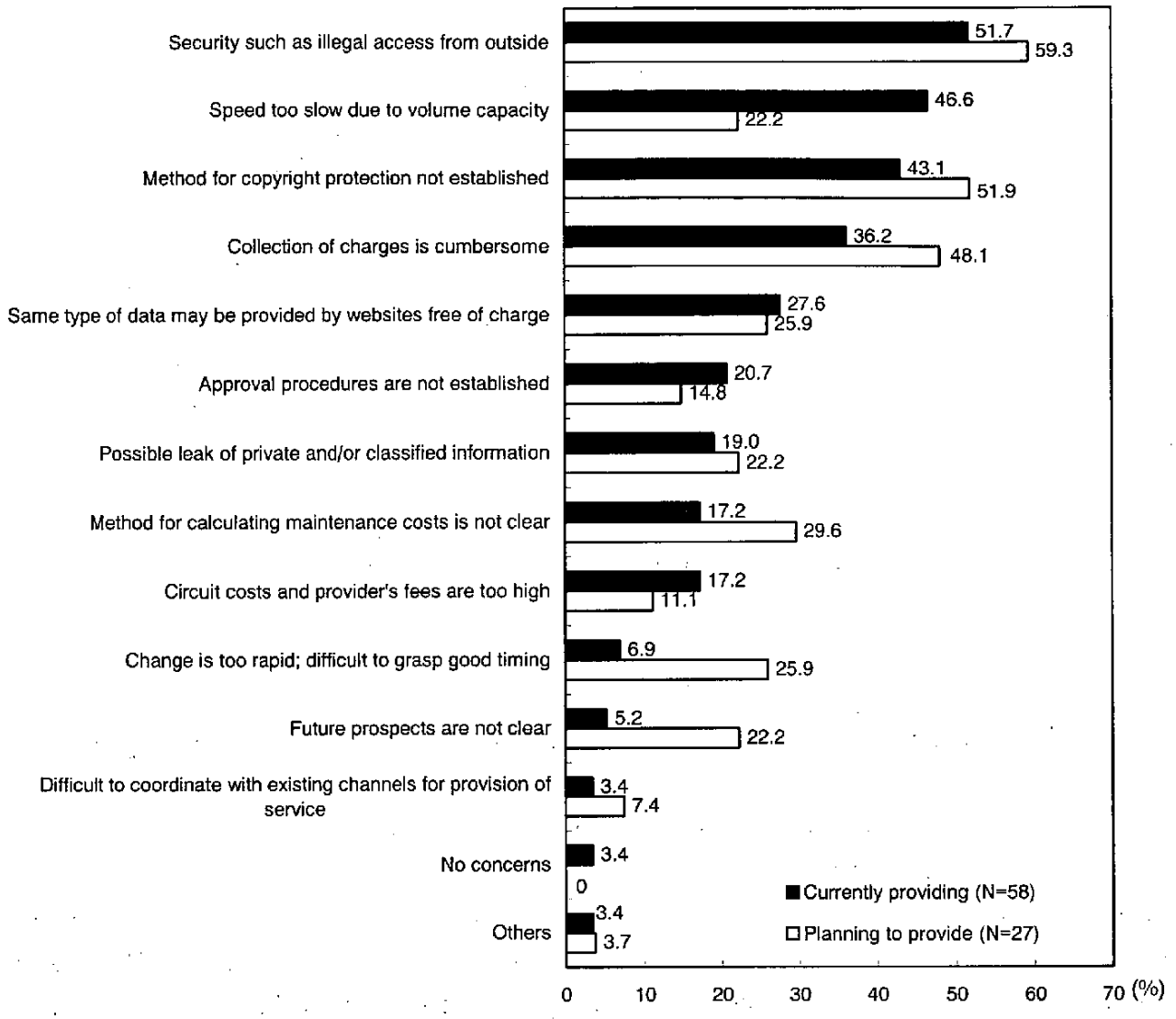


Fig. III-19. Some Concerns and Problems of Data Services via the Internet (multiple replies)

11. Providing Databases through CD-ROM

11.1 Status of CD-ROM Supply

As shown in Fig. III-20, 52 firms or 54.7% of the vendors provide databases in the form of CD-ROM. Although there was a slight decrease in the previous survey, there has been an increasing trend over the years, and since 1997, more than half of the vendors are providing such databases consistently.

As mentioned before, in response to a previous question, there was some cooling of enthusiasm of vendors toward multimedia services. While this is not necessarily propitious for CD-ROM, CD-ROM maintains a strong following as shown in Fig. III-4.

11.2 Categories of CD-ROM Databases

Vendors that supply CD-ROM databases can be broadly categorized as follows: "business" 31 companies, "natural science and technology" 30 companies, "general" 19 companies, "humanities and social science" 3 companies, and "others" 3 companies. Compared to the findings in the previous survey, "business" increased by 6 companies, "natural science and technology" increased by 12 companies, no change for "general," and both "humanities and social sciences" and "others" each declined by 3 companies.

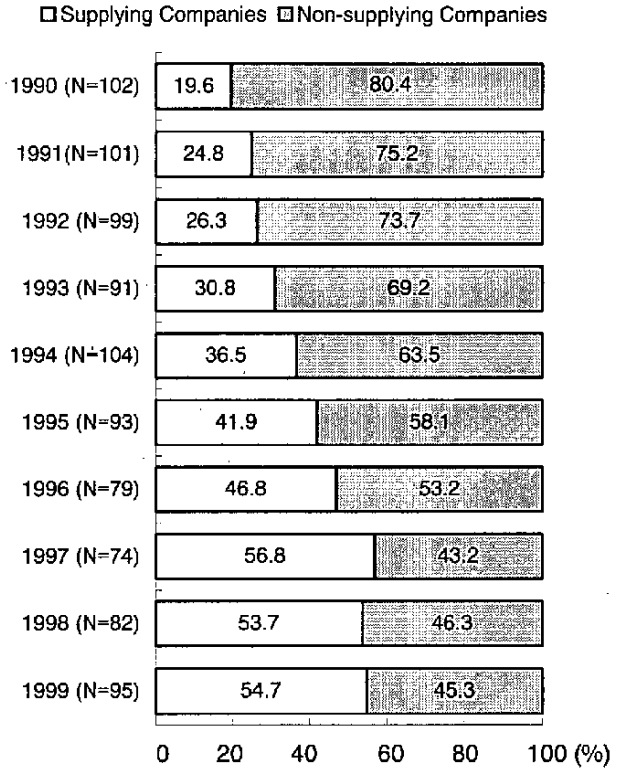


Fig. III-20. Status of Supply of Databases in CD-ROM

Regarding the smaller classifications, "medicine/pharmacology, biotechnology, chemistry" is at the top with 12 companies (an increase of 6 companies from the previous year), followed by "corporate and financial information" with 8 companies (an increase of 2 companies), "newspaper/magazine/news" with 7 companies (a decrease of 1 company), "map/mapping, telephone numbers, postal codes" and "statistics/population" with 6 companies each (an increase of 2 companies and an increase of one company, respectively).

The cumulative total of the titles provided increased by 21 in the previous survey to 321 titles. While the ratio of vendors that provide CD-ROM databases increased only slightly, the number of titles provided increased by 7% from the previous survey.

12. Present State of Japanese Databases Supplied Overseas

The Japan Database Industry Association (DINA) was commissioned by DPC in July 1999 to conduct their 13th survey on their members, DPC supporting members and other organizations involved in database services. Survey forms were sent to 244 organizations, replies to which were obtained from 129 (response rate: 52.9%).

65 of the respondents made their databases accessible from overseas and 9 were planning overseas services. The past twelve years had shown a steady increase in the number of Japanese databases available to overseas users, but the figure for July 1999 stood at 403, down 48.0% from the previous year. The decrease was attributed to Nifty's narrowing of its operations from the previous year's 452 databases to 3. Previously, Nifty had accounted for half of all data services. Since Nifty databases are available only to its members (companies and individuals in Japan), many Nifty databases were excluded from the 1999 survey. The number of databases other than those of Nifty, however, increased to 400 from the previous year's figure of 381, an increase of 5% over the previous year.

By category, 403 databases are classified into the following: 52 (12.9%) in science/technology; 162 (40.2%) economy/business; 180 (44.7%) general; 8 (2.0%) economy/business/finance + general; 1 (0.2%) science/technology + economy/business/finance.

By language, Japanese accounts for 278 (69.0%) databases, English 54 (13.4%), others 1 (0.2%), Japanese + English 68 (16.9%), Japanese + English + others 1 (0.2%), and English + others 1 (0.2%).

With respect to distribution media, 20 (5.0%) used the Internet, 276 (68.5%) online, 24 (6.0%) MT/FD, 13 (3.2%) CD-ROM/DVD/CD-I, 4 (1.0%) the Internet + online, 1 (0.2%) the internet + MT/FD + CD-ROM/DVD/CD-I, 1 (0.2%) the internet + CD-ROM/DVD/CD-I, 23 (5.7%) online + MT/FD, 7 (1.7%) online + CD-ROM/DVD/CD-I, 28 (6.9%) online + MT/FD + CD-ROM/DVD/CD-I, and 6 (1.5%) MT + CD-ROM/DVD/CD-I.

Table III-1 Number of Japanese Databases Supplied Overseas

Item \ Time of Survey	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
No.of databases and proportion	155	226	290	306	353	374	430	739	833*	403**
supplied(%)	(19.2)	(25.3)	(31.1)	(30.4)	(33.7)	(33.3)	(36.9)	(59.5)	(67.9)	(29.5)

*Including 452 Nifty databases

**Including 3 Nifty databases

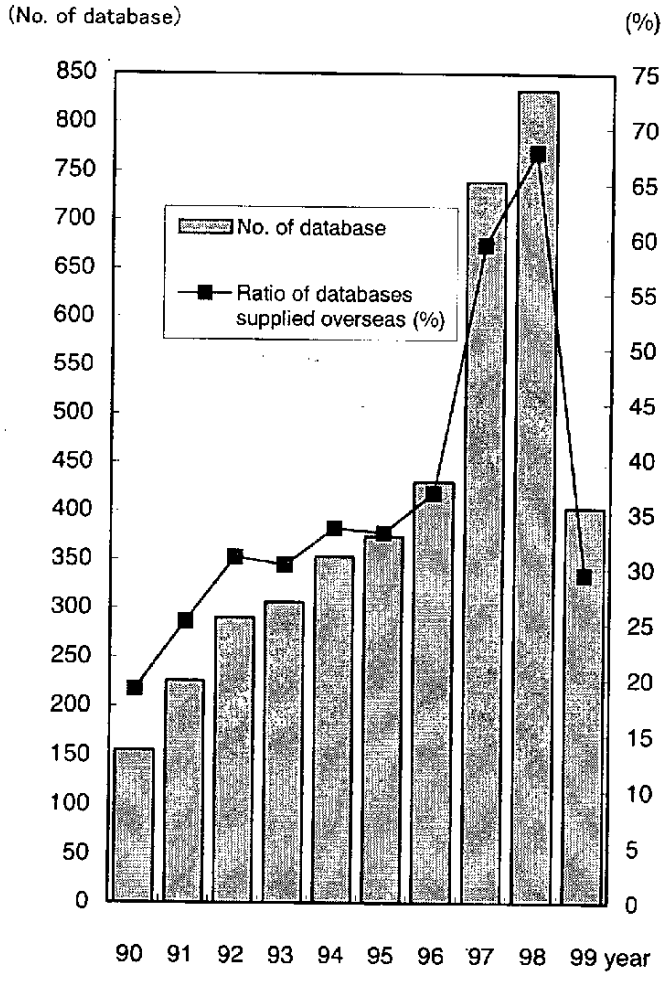


Fig. III-21 Growth of the Number of Databases Supplied Overseas

IV. Present State of Use of Commercial Databases

1. Introduction

This chapter examines the state of use of commercial databases and awareness of their use among users, based upon the results of the "Survey on the Status of Japanese Database Services (User Edition)," conducted by DPC in October 1999. This survey took the form of a questionnaire survey conducted among 2,649 companies. 594 responses were received (collection rate of 22.4%).

In tabulating and analyzing the results, the following standards were used for classifying firms:

[1] Classification Standards for Company Size Based Upon the Number of Employees (Table IV-1)

[2] Classification Standards by Industrial Category (Table IV-2)

Table IV-1. Classification Standards for Company Size Based Upon the Industrial Category and the Number of Employees

Industrial category	Medium/small sized companies	Large companies	Public services
Construction industry, Oil and chemical industries, Iron and steel, nonferrous metal, and metal manufacturing industry, Machinery and equipment manufacturing industry, Other manufacturers	300 or less	More than 300	
Commerce	100 or less	More than 100	
Finance and insurance, Information processing and information supply service, Newspaper and publishing industry, Broadcasting and telecommunications industry, Other business services	50 or less	More than 50	
Public service			

2. Usage Results and Forecasts

2.1 Use of Commercial Database Services in FY1998

71.0% of all responding companies use commercial database services, whole 2.2% used them in the past and 26.8% have never used them. In comparison with the previous survey, the ratio of firms that use database services increased by 3.5 points to surpass the 70% mark for the first time. The ratio of companies that are not using such services declined from the previous survey, so the

number of users of database services is rising steadily.

Regarding the money value of the services used by database users, 408 out of 422 user companies gave a response. In terms of comparison with the use in the previous year, 53.2% of all users said that it is "about the same as in the previous year," followed by 27.5% of companies that said "increased somewhat (increase of under 20%)." 6.6% said that the amount "increased dramatically (increase of over 20%). Companies which increased usage of databases total 34.1%, far exceeding the 12.7% of companies citing "decreased" or "decreased somewhat" (Fig. IV-1).

Table IV-2. Classification Standards for Industrial Category

Industrial category			Types of industry included (industrial type classifications in the Standard Classification of Japanese Industry)
Secondary industry	1	Construction industry	Construction industry
	2	Oil and chemical industries	Medical and pharmaceutical products manufacturing industry, oil industry, chemicals industry
	3	Iron and steel, nonferrous metal and metal products manufacturing industry	Iron and steel, nonferrous metal and metal products manufacturing industry
	4	Machinery and equipment manufacturing industry	Electrical machinery, transportation machinery, general machinery, and precision machinery manufacturing industry
	5	Other manufacturers	Food products industry, textile/paper/pulp industry, glass and ceramics industry, Other manufacturing industries
Tertiary industry	6	Commerce	Wholesale trade, trading industry, retail industry, and food service industry
	7	Finance and insurance	Financial industry, securities industry, insurance industry
	8	Information processing and information supply service	Information processing services/software, information supply industry
	9	Newspaper and publishing industry	Newspaper industry, publishing industry
	10	Broadcasting and telecommunications industry	Broadcasting industry, telecommunications industry
	11	Other business services	Real estate industry, transport/warehouse industry, power/gas industry, think-tanks, advertising industry, and other service industries
	12	Public service	Schools and other educational organizations, hospitals and other medical care organizations, survey/research agencies, trade unions and other organizations, central government and local government agencies.
	13	Other	Agriculture/forestry/fisheries, mining, others

What are the reasons for the changes in database use shown in Fig. IV-2 and IV-3? 114 out of 139 companies who reported increased usage gave a response. The most frequent response was that "the increase in the number of personal computers and terminals has made information searches easier" (56.1%). This is followed by "start of new work led to an increase in the amount of

information searches needed" (42.1%), and over one-quarter replied "number of contracts for commercial database services increased" (26.3%).

Companies were also asked to give reasons for a decrease in use of database services. Of the responding companies whose use of database services "decreased " or "decreased somewhat," nearly two-thirds (58.8%) reported much greater use of "free websites," which far exceeded the second and third reasons, namely, "work load has reduced, resulting in decreased use" (33.3%), and "reduction and consolidation in the number of database service contracts" (17.6%).

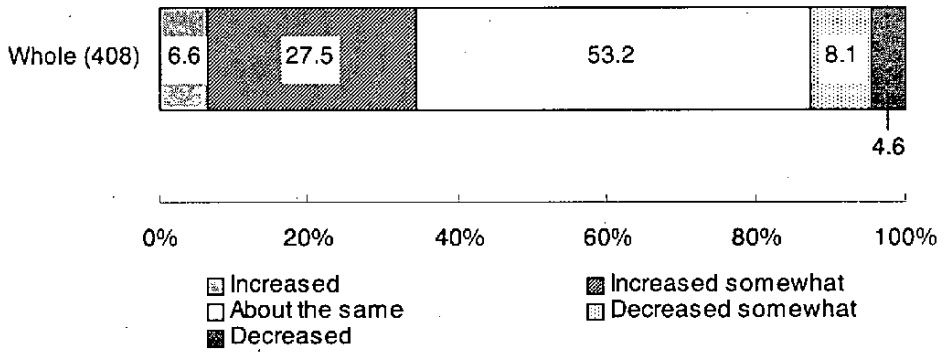


Fig. IV-1. Situation of Commercial Database Use in FY1998 (Comparison with the previous year)

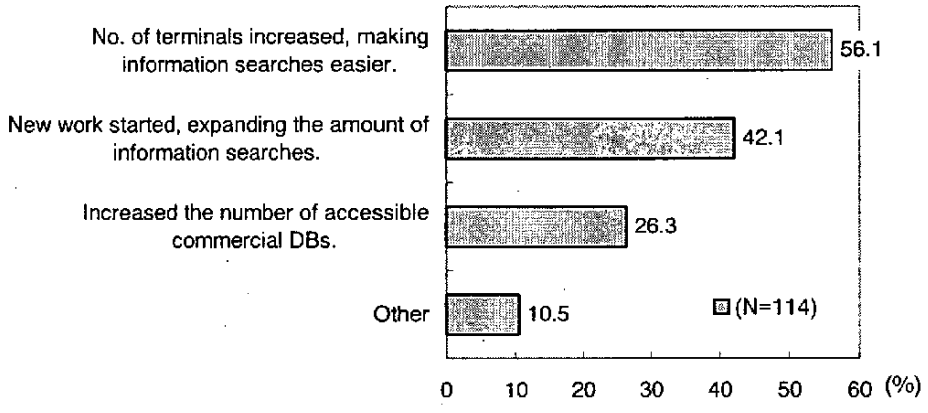


Fig. IV-2 Reasons for Increased Use of Commercial Databases in FY1998

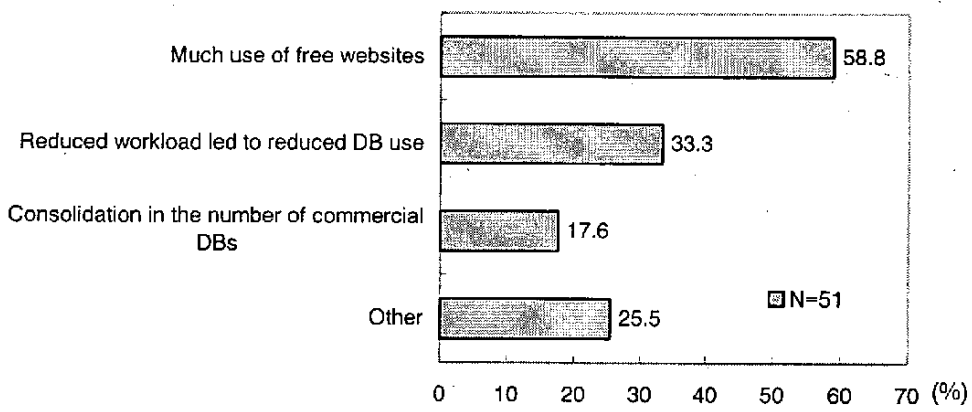


Fig. IV-3. Reasons for Decreased Use of Commercial Databases in FY1998

2.2 Usage Status by Division

When the rates of database usage by company division on a monetary basis were examined in terms of the total use for all industrial categories (Table IV-3), the divisions with the highest usage were the "survey division" (20.8%), "research division" (18.4%), "patent division" (14.0%), and "sales division" (13.3%). In comparison with the results of the previous survey, the ranking of "patent division" and "sales division" changed places, and in terms of rates, the usage by "survey division" and "research division" decreased somewhat, while that of "planning division" came close behind.

Table IV-3 Rates of Database Usage by Company Division

	Total of all industrial categories
Number of responses (companies)	412
Planning division (%)	12.7
Survey division (%)	20.8
Research division (%)	18.4
Patent division (%)	14.0
System division (%)	4.0
Production division (%)	0.9
Sales division (%)	13.3
General affairs division (%)	3.7
Accounting/finance division (%)	4.6
Other divisions (%)	7.7

3. Types of Contents of Frequently Used Commercial Databases

3.1 Frequently Used Service Systems and Databases

The top five database service systems in terms of money spent on usage are described below and shown in Table IV-4 and Table IV-5.

The most used system is "Nikkei Telecom," followed by "JOIS," "PATOLIS," "DIALOG," and "@nifty" (formerly Nifty Serve), thus there is no change in the order of the top five services from the previous year. There were some changes in the ranking from the 6th to 15th positions, namely "COSMOS" (from No.8 in the previous survey to No.6 this time), "STN International" (from No.6 to No.8), and "BIGLOBE" (below No.16 to No.13). Aside from the big growth registered by BIGLOBE, there was no significant change (this is especially the case since the response rate for "TSR" in positions No.9 and below was a single-digit figure). In addition to those services listed in Table IV-4, services such as "JACIC NET," "QUICK," "REUTERS BUSINESS BRIEFING," "ORBIT," and "DOW JONES INTERACTIVE" achieved significant sales.

Examining the usage ranking by company size, among the big firms the top five ranking was the same as that for overall responses, but among smaller enterprises, the top ranks were: "JOIS," followed by "PATOLIS" "Nikkei Telecom," "DIALOG," and "@nifty." Thus, "Nikkei Telecom," which ranks top among large firms, ranks No.3 among smaller enterprises.

For public services, top ranked are "JOIS," "Nikkei Telecom," "DIALOG," "NACSIS-IR," and "@nifty" in that order, and it is notable that "NACSIS-IR" which ranks 11th overall is ranked very high here.

The database service (file) that is used the most is "Nihon Keizai Shimbun Article File," followed by "JICST File on Science and Technology Document," "COSMOS," "Patent/Utility Model File," and "TSR." In comparison with the results of the previous survey, the ranking changed for "Nihon Keizai Shimbun Article File" (from No.3 last time to No.1 this time), "JICST File on Science and Technology Documents" (from No.1 to No.2), "COSMOS" (from No.4 to No.3), and "Patent and Utility Model File" (from No.2 to No.4). Thus, four of the top five changed places. Also, "Mainichi Shimbun Article File" moved from below No.15 to No.14 this time, and "WHO" dropped from No.12 to No.25.

The "Ranking of Providers of Online Information Services" in "Nikkei New Media" (published by Nikkei BP Inc.) is shown for reference (Fig. IV-6).

Table IV-4. Frequently Used Systems on a Monetary Basis in Order of Number of Replies (N=407: multiple replies)

Rank	Service system name	No. of replies	Reply ratio (%)
1	Nikkei Telecom	195	47.9
2	JOIS	179	44.0
3	PATOLIS	139	34.2
4	DIALOG	118	29.0
5	@nifty	108	26.5
6	COSMOS	91	22.4
7	G-Search	81	19.9
8	STN International	74	18.2
9	TSR	33	8.1
10	ELNET	32	7.9
11	NACSIS-IR	26	6.4
11	NICHIGAI-ASSIST	26	6.4
13	BIGLOBE	22	5.4
14	NEEDS	21	5.2
15	BRANDY	18	4.4
:	:	:	:
:	:	:	:

Table IV-5. Databases with High Utilization Frequency (N=385: multiple replies)

Rank	Service system name	No. of replies	Reply ratio (%)
1	Nihon Keizai Shimbun Article File	157	40.8
2	JICST File on Science and Technology Documents	151	39.2
3	COSMOS (TEIKOKU DATABANK Corporate File)	143	37.1
4	PATENT AND UTILITY MODEL FILE	128	33.2
5	TSR (TOKYO SHOKO RESEARCH Corporate File)	112	29.1
6	CA	58	15.1
7	WPI	50	13.0
8	Asahi Shimbun News Database	46	11.9
9	Trade Mark File	35	9.1
10	EMBASE	34	8.8
10	Nikkei WHO'S WHO	34	8.8
10	MEDLINE	34	8.8
13	JICST "Ichushi Domestic Bibliographical File on Medicine"	31	8.1
14	Mainichi Shimbun Article File	30	7.8
15	REGISTRY	27	7.0
:	:	:	:
:	:	:	:

3.2 Categories of Frequently Used Databases

This section looks at the target categories of databases that are frequently used (Fig. IV-4). With regard to domestic databases, "corporate finance/profile" continues to rank top with 70.2%, followed by "newspapers/journals/news" with 65.0% (No.2 last time), "who's who/organization information" with 43.8% (No.4 last time), and "patents" with 42.6% (No.3 last time).

With regard to databases produced overseas, on the other hand, "patents" again was top with 52.5% (No.1 last time), followed by "medicine/pharmaceuticals/biotechnology/biology" with 49.7% (up from No.5 last time), "chemicals" with 49.2% (No.2 last time), "corporate finance/profile" with 44.1% (No.3 last time), and "newspapers/journals/news" with 40.8% (No.4 last time). "Medicine/pharmaceuticals/ biotechnology/biology," which ranked No.2 this time, rose sharply by 9.3 points from the previous survey. Also "electricity/electronics/information" rose by 7.6 points from the previous survey. This shows that there is a high demand for databases produced overseas in these fields.

3.3 Types of Data Currently Used

The types of data that users currently use and wish to use more in the future were tabulated separately for online and offline usage.

As shown in Table IV-7, for both online and offline, the usage level is in the order of "text data," "numerical data," "image data," and "multimedia." This is the same pattern as that found in the previous survey. The score for "image data" for online use increased by 5.6 points from the previous survey. Due to the problem of circuit capacity, the usage of online image data was 13 points lower than offline image data in the previous survey, but that gap has now narrowed to about 8 points. With regard to "multimedia," there was a slight decrease of 0.3 points for offline use, and a small increase of 0.6 points for online use in comparison with the previous survey.

As for the types of data that users wish to use or use more in the future, the order was "text data," "image data," "numerical data," and "multimedia" for both online and offline usage. Compared to the present situation, there is a stronger desire to use "image data" and "multimedia." In particular, the desire to use " online image data" is almost 60%, showing the biggest gap with the present level of use among all types of data. This figure indicates the strong demand in this area. As for "multimedia," while the present rate of usage has declined slightly, demand from users is expected to increase dramatically, as in the case of image data.

Table IV-6-1. Ranking of Online Information Service Companies (Producers)

(Source: Nikkei New Media)

Supplying Company and Organization	Name of Service	Description	No. of passwords accessible from Internet		No. of passwords including services provided on its own network	
			As of Jan. 1, 2000	As of Jan. 1, 1999	As of Jan. 1, 2000	As of Jan. 1, 1999
AOL Japan	AOL	Business information, financial information, sports information, etc.	Not released	Not released	380,000	200,000
Nihon Keizai Shimbun (*1)	Nikkei Telecom 21, Nikkei Telecom	News, newspaper and magazine articles, information related to enterprises, personnel, stock prices, and statistics, etc.	300,000	100,000	310,000	150,000
Kinokuniya Co., Ltd. (*2)	BOOK/WEB	Book and CD content information	135,000	70,000	135,000	70,000
TKC Corp.	ProFIT, LEX/DB, TPS1000, TPS9000, AUDIT96, PX!, etc.	Information on tax revisions, complete text DB of judicial precedents, ordiances, etc., management indicators, management planning, wage calculations, etc.	24,531	13,612	81,334	65,246
JICST	JOIS, STN-International	Science, technology and medical literature database, database of scientific and scholarly information	16,939	16,686	16,939	16,686
TEIKOKU DATABANK, Ltd.	COSMOS NET COSMOS	Corporate financial and director information, corporate profile information, Corporate credit survey reports, corporate income reports, Corporate tax reports, etc.	3,000	0	13,920	9,348
Tohan Co., Ltd. (*3)	SUPER TONETS, Book Adventure Team	Bibliographical information	2,000	1,000	10,190	8,910
Kyodo News Markets Co., Ltd.	Kyodo Real Time News	24-hour real-time financial and business information, etc.	0	0	4,500	4,400
Brandy International Co., Ltd.	BRANDY	Similar trademark searching, trademark bibliographical information searching, trademark public relations	0	0	1,850	1,800
Japan Construction Information Center (*4)	JACIC NET	Public works bidding and contract information, construction news, construction statistical information, etc.	1,700	0	1,700	1,684
Tokyo Kantei Corp.	Real estate information services	Apartment (condominium) and land price information	0	0	1,200	550
Kokusai Information Service Co., Ltd.	KISPAT	Patent information, corporate information, market research information, etc.	0	0	120	120
Total for 12 online information service companies (producers) (*5)			**483,170**	**201,298**	**956,753**	**528,744**

Notes:
* 1. This time, only the number of passwords for Nikkei Telecom and Nikkei Telecom 21 is made public.
* 2. Only the number of passwords for BOOK/WEB is made public.
* 3. The number of passwords shows the number of bookstores that have introduced the service of SUPER TONETS or "Hon-no Tankentai."
* 4. Only the number of passwords for JACIC NET is made public.
* 5. Unreleased numbers are regarded as 0 for the purpose of tabulation.

Table IV-6-2. Number of Contract Users of Online Information Service Companies (Distributors including producers that distribute)

(Source: Nikkei New Media)

Supplying Company and Organization	Name of Service	Description	No. of passwords accessible from Internet		No. of passwords including services provided on its own network	
			As of Jan. 1, 2000	As of Jan. 1, 1999	As of Jan. 1, 2000	As of Jan. 1, 1999
NIFTY (*1)	@nifty	Newspaper article information, corporate information, new product information, sports information, medical information, etc.	3,580,000	2,670,000	3,580,000	2,670,000
NEC Corp.(*2)	BIGLOBE	Corporate information, newspaper article information, marketing information, economic information, semiconductor-related information, etc.	2,850,000	2,650,000	2,850,000	2,650,000
AOL Japan	AOL	Business information, financial information, sports information, information directed to households and consumers, etc.	Not released	Not released	380,000	200,000
Nihon Keizai Shimbun (*3)	Nikkei Telecom 21, Nikkei Telecom	News, newspaper and magazine article information, information related to enterprises, personnel, stock prices, and statistics, etc.	300,000	100,000	310,000	150,000
G-Search Ltd. (*4)	G-Search commercial DB, database services for corporations, Dialog, DataStar, DialogWeb, DialogSelect, DataStar web, Profound	Newspaper article information, corporate information, who's who information, magazine and book information, marketing and new product information, government and municipal office information, scientific and technical information, law, patents, medical information, various types of survey reports, etc.	187,349	106,475	187,349	107,559
Kinokuniya Co., Ltd. (*5)	BOOK/WEB	Book and CD content information	135,000	70,000	135,000	70,000
TKC	ProFIT, LEX/DB, TPS1000, TPS9000, AUDIT96, PXI, Continuing MAS, Corporate defense DB, etc.	Tax revision information, complete text DB of judicial precedents, ordinances, etc., management and economic indicators, management planning, tax work simulation, wage calculation, life insurance contract simulation, etc.	24,531	13,612	85,659	67,826
Quick	QUICK-IS Level I/II, QUICK-21 Watch I/II, QUICK Index Board, etc.	Comprehensive economic information centered on securities and financial information.	0	0	48,000	46,000
Kyodo News Markets Co., Ltd.	Kyodo real-time news, Tele-rate	24-hour real-time market information on foreign exchange, interest rates, stock prices, derivatives, survey and analytical reports, etc.	100	0	18,500	14,000
JICST	JOIS, STN-International	Science, technology and medical literature database, academic information database, etc.	16,939	16,686	16,939	16,686
TEIKOKU DATABANK, Ltd.	COSMOS NET, COSMOS	Corporate financial and director information, corporate profile information, corporate credit survey reports, corporate income reports, corporate tax reports, etc.	3,000	0	13,920	9,348

Supplying Company and Organization	Name of Service	Description	No. of passwords accessible from Internet		No. of passwords including services provided on its own network	
			As of Jan. 1, 2000	As of Jan. 1, 1999	As of Jan. 1, 2000	As of Jan. 1, 1999
Bloomberg L.P.	Bloomberg	Securities/financial/finance work information, analysis, current valuation, risk management	Not released	Not released	13,000	9,800
Kokusai Information Service Co.		Patent information, corporate information, market survey information, etc.	12,300	12,000	12,800	12,500
Fujitsu FIP	Internet information service "Inter-Crus," General Database "G-Search"	Map information, leaflet information, meteorological information, statistical information, corporate information, newspaper article information, magazine and book information, who's who information	6,326	3,657	12,000	10,120
Tohan Co., Ltd. (*6)	SUPER TONETS, Book Adventure Team	Bibliographical information, etc.	2,000	1,000	10,190	8,910
Electronic Library Inc.	ELNET (ELMOR, ELSDI, ELDB, etc.)	Article information from 60 domestic newspapers and about 150 magazines, article image database	0	0	2,810	2,450
Brandy International	BRANDY	Similar trademark searching, trademark bibliographical information searching, trademark public relations, etc.	0	0	1,850	1,800
Japan Construction Information Center (*7)	JACIC NET	Public works bidding and contract information, construction news, construction statistical information, etc.	1,700	0	1,700	1,684
Tokyo Kantei	Real estate information services	Condominium and land price information	0	0	1,200	550
Total for 19 online information service companies (including distributors)(*8)			**7,119,245**	**5,643,430**	**7,680,917**	**6,049,233**
Japan Information Processing Service Co., Ltd. (*9)	Infostream, Orbit, JIP-TRADE, JIP-INFO, JIP-MOBILE	Pharmaceutical information, medical information, overseas patent information, securities and financial information, etc.	2,500	250	Not released	Not released
Maruzen Co., Ltd. (*9)	Maruzen Internet Shopping, Super Choice Kun, Knowledge Worker	Bibliographical information on books (both Japanese and imported books) and contents information, etc.	Not released	39,000	Not released	39,000
Reuters Japan, Ltd. (*10)	Reuters First, Reuters First Web, Reuters Business Briefing, etc.	Online provision of exchange rates, securities and other financial information using characters and images, financial databases, business information database covering various industries	Not released	Not released	521,000	485,000

Notes:
* 1. The number of passwords shows the number of persons who can use it. The total number of passwords includes about 800,000 passwords carried over from Fujitsu's "Infoweb" (through merger) in November 1999.
* 2. The number of passwords shows the number of persons who can use it.
* 3. Only the passwords for Nikkei Telecom and Nikkei Telecom 21 are made public.
* 4. G Search took over the information services that had been provided by KMK DigiTex in February 2000, and so the number of passwords includes passwords for those services.
* 5. Only the number of passwords for BOOK/WEB is made public.
* 6. Only the number of passwords for the number of bookstores that have introduced the service of SUPER TONETS and/or "Hon-no Tankentai" is shown.
* 7. Only the number of passwords for JACIC NET is shown.
* 8. Unreleased numbers are regarded as zero.
* 9. Handled separately, because the total number of password had not been released as of January 2000.
* 10. Handled separately, because the number of passwords includes users all over the world.

3.4 Making Use of Public Data

We asked users about their usage of databases that provide public data (data produced and made public by governmental agencies and other public organizations). As Table IV-8 shows, 284 companies are "using" public type data, accounting for about 67.3% of the number of firms that use commercial databases (422 companies). This represents an increase of 2.2 points from the previous survey (65.1%), and shows that usage of public data is increasing steadily. The types of data used can be classified broadly into "text data" and "numerical data," but the figure for "text data" is much higher both for present use and future intention.

Regarding the response of users who do not use public data at present and the types of data that they intend to use in the future, "government reports (Gazette or Kanpo)" was top with 51.5% in the area of "text data," and "corporate-related data" with 46.8% came first in the area of "numerical data." "Patent information," which is at the top of "text data" now in use, stood at 20.3%, the lowest figure for all types except for "other."

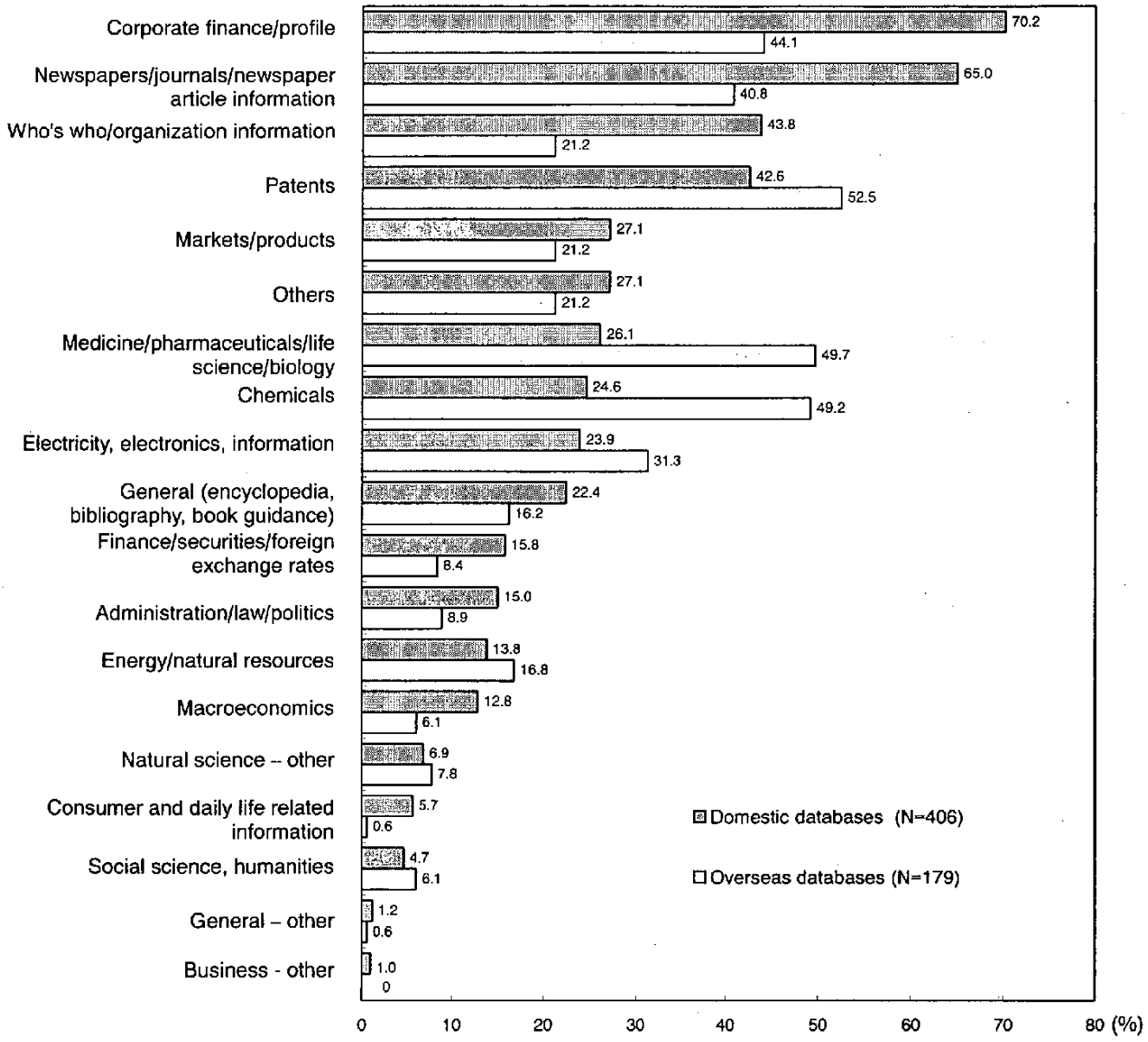


Fig. IV-4. Categories of Frequently Used Databases (multiple replies)

Table IV-7. Types of Data Currently Used and Desired to be Used in the Future (multiple replies)

	Currently using				Desire to use Desire to use more			
	Online (N=391)		Offline (CD-ROM, etc.) (N=185)		Online (N=268)		Offline (CD-ROM, etc.) (N=108)	
	No. of replies	Reply ratio (%)	No. of replies	Reply ratio (%)	No. of replies	Reply ratio (%)	No. of replies	Reply ratio (%)
Text data	381	97.4	155	83.8	163	60.8	70	64.8
Numerical data	204	52.2	72	38.9	136	50.7	49	45.4
Image (including animation)	94	24.0	59	31.9	160	59.7	53	49.1
Multimedia	16	4.1	12	6.5	77	28.7	25	23.1
Other	5	1.3	4	2.2	2	0.7	3	2.8

Table IV-8. Utilization of Databases Handling Public Data (multiple replies)

		Currently Using (N=284)		Wish to use in the future (N=231)	
		No. of replies	Reply ratio (%)	No. of replies	Reply ratio (%)
Text Data	Government white papers and related documents	97	34.2	90	39.0
	Government committee reference materials	62	21.8	63	27.3
	Government press conference reference materials	49	17.3	60	26.0
	Government reports (Gazette or Kanpo)	79	27.8	119	51.5
	Judicial precedents	39	13.7	80	34.6
	City planning data (including map information)	19	6.7	71	30.7
	Patent information	183	64.4	47	20.3
	Others	5	1.8	7	3.0
	Total	255	89.8	211	91.3
Numerical Data	Population, employment and labor	69	24.3	67	29.0
	Domestic economy, business climate and finance	70	24.6	88	38.1
	International trade and settlement	38	13.4	75	32.5
	General business and industry	93	32.7	101	43.7
	Corporate-related Data	137	48.2	108	46.8
	Others	1	0.4	8	3.5
	Total	181	63.7	165	71.4

4. Database Utilization Forms

We surveyed the forms by which databases are used, and tabulated the ratio of use based upon the amount of usage.

[1] Use of online database services excluding the Internet

[2] Use of data services on the Internet

[3] Use of offline data services through CD-ROM

[4] Use of other forms of offline data services

We made changes in the definition of forms. Up to the previous survey, (1) online database services "excluded PC networks" but this time, it excludes only the Internet, and with regard to (2), it has been changed to include only "data services on the Internet." Therefore, no year-on-year comparison can be made.

As shown in Table IV-9, the actual usage results show that the use of databases produced overseas is higher for services in (1), while the use of domestic databases is higher than overseas ones for services in (2). Regarding the usage intention for FY1999, the use of (1) is expected to decline, and the use of (2) expected to rise, and so the gap between (1) and (2) is tending to become narrower.

With regard to the actual usage results for offline database services, (3) commercial CD-ROM increased for both domestic and overseas databases, but the forecast for FY1999 indicates no change. As for (4), other commercial offline declined from the previous year, and is expected to continue to decline.

5. Issues on Pricing and Utilization

5.1 Issues Related to Pricing

The responding companies who indicated that their overall impression for commercial database charges was "expensive" accounted for 62.8% of the total (compared to 64.9% in the previous survey), while 36.8% (vs. 35.1%) of the responding companies felt that they were "reasonable," and 0.5% (vs. none last time) evaluated them as "inexpensive." Looking at the trends in users' views of pricing in recent years, there has been a pattern of about 60% saying "expensive" and 40% saying "reasonable," but starting with the previous survey (1998), the ratio of those who feel it is "expensive" has started to decline (although slightly), and those who feel that it is "reasonable" or even "inexpensive" have begun to increase. Thus, opinions about charges are changing, and this item needs to be monitored carefully.

Among those firms that use commercial databases now, 48.8% believe that the charges for domestic database services are "expensive" (vs. 53.7% last time) and 49.9% say "reasonable" (vs. 44.6%). With regard to databases produced overseas, 47.8% say "expensive" (vs. 59.6% last time)

and 46.2% say "reasonable" (vs. 36.8%). Thus, the ratio of user firms that feel that charges are "expensive" has declined significantly from the previous year; and this is especially the case for databases produced overseas. This may be due, in part, to the effect of the strong yen.

Table IV-9. Commercial Database Utilization Method

	1998 Results (%)		1999 Forecast (%)	
	Domestic (N=355)	Overseas (N=159)	Domestic (N=346)	Overseas (N=158)
(1) Commercial online (excluding services via the Internet)	59.8	65.8	55.6	61.7
(2) Commercial online via the Internet	26.2	20.2	30.5	24.1
(3) Commercial offline: CD-ROM	9.2	12.7	9.4	12.6
(4) Commercial offline: Other	4.9	1.4	4.5	1.6

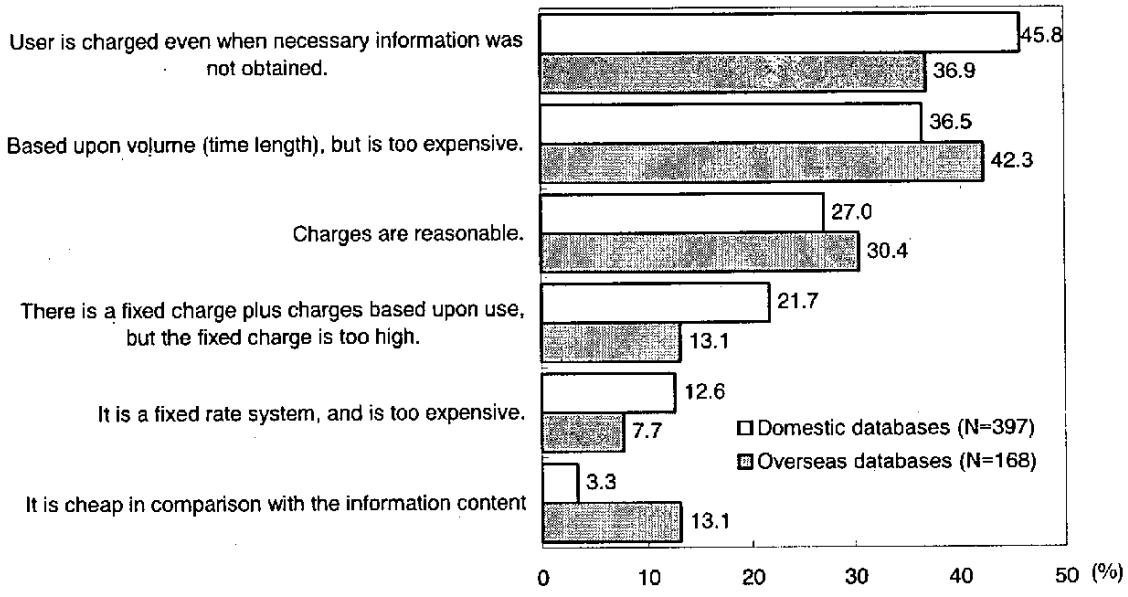


Fig. IV-5. Feedback on Charges (multiple replies)

Regarding users' opinions on charges, "user is charged even when the necessary information and data are not obtained" and "it is based upon volume (time length), but is too expensive" ranked high for both domestic and overseas databases (Fig. IV-5). On the other hand, there were a few who felt that "it is cheap in comparison with the information content," and when this is combined with those who say charges are "reasonable," a considerable portion of users feel that charges are fair.

The reply ratio of "reasonable" is high for databases produced overseas with a qualitatively

good content. This is a reminder that database quality and customer satisfaction are related. Other replies included: "it is expensive even though information is old"(for a domestic database), "while an annual fixed charge is desirable, this would be too expensive," and "the membership fee is too high."

5.2 Feedback on Recorded Information

Regarding users' views on data recorded in databases, for domestic databases, the top two items are "updating of database takes too long" and "updating frequency of information is too low." Thus, for users, obtaining the latest information has highest priority (Fig. IV-6). Also, since these items are not raised as issues for databases produced overseas, users appear to believe that domestic databases provide less fresh, up-to-date information, in comparison with databases produced overseas.

For databases produced overseas, the reply "no special dissatisfaction" remains top with 38.5%, with the score increasing by 4.6 points from the previous survey. In overseas databases, both the user strata and types of information provided are more stable, which may account partly for the high ratio of users citing "no special dissatisfaction." This is followed by "information is inaccurate at times" (21.8%), "full text is not recorded" (21.8%), and "existence of desired information is not clear" (20.5%). So, the greatest user need regarding databases produced overseas is the location and accuracy of the information.

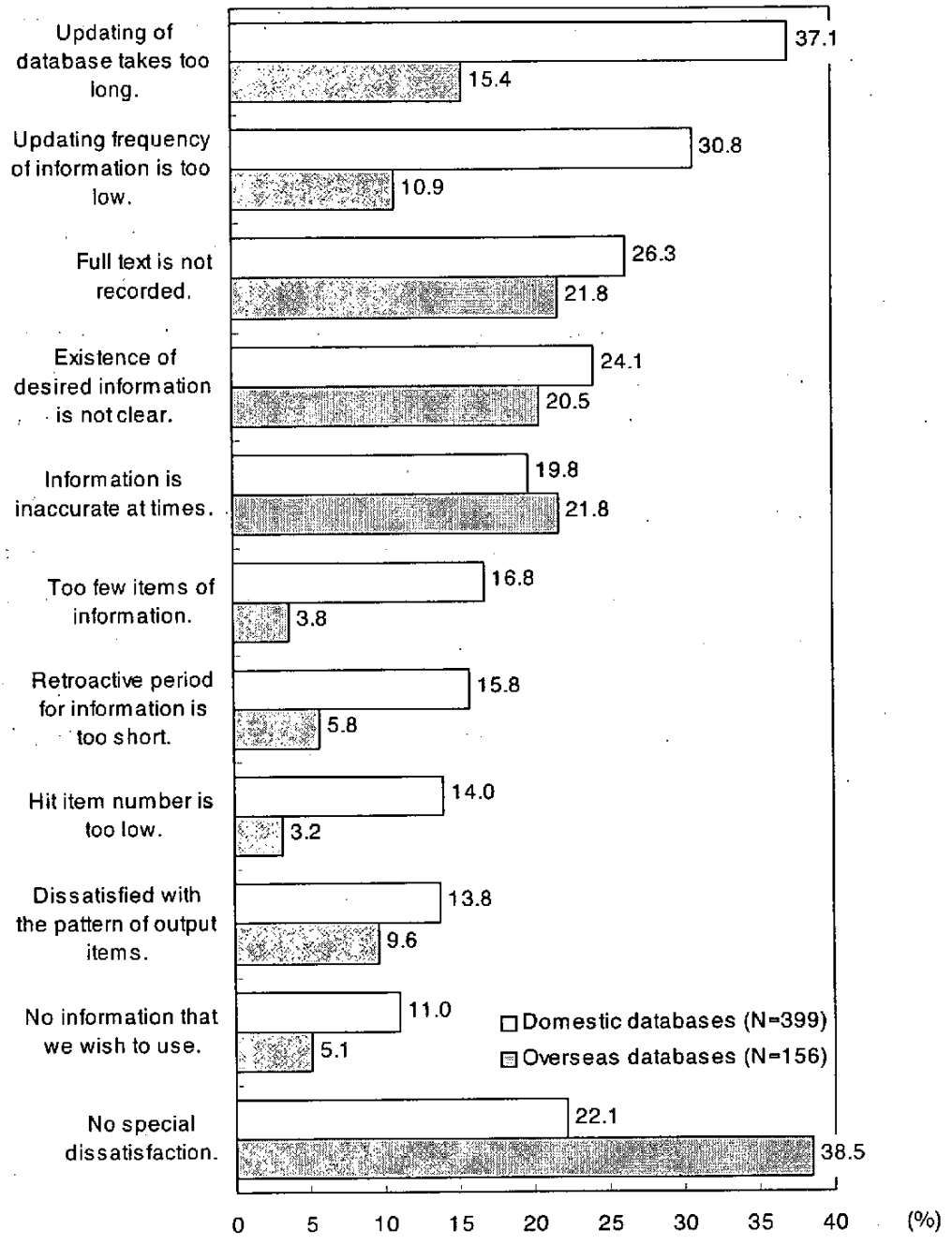


Fig. IV-6. Feedback on Recorded Information (multiple replies)

6. Users of Databases

We surveyed the ways in which databases are used by firms. As shown in Table IV-10, "the person who needs specific information searches for it himself" was the most frequent reply with 68.6%, followed by "database search department is asked to do the search" with 34.3%, and "specialized searchers within the company are asked to do the search" with 20.4%. The ratio of "the person who needs the specific information searches for it himself" has been rising in recent years. This is largely due to the significant increase in the number of personal computers used in offices and the increase in the number of network access points. Thus, the information environment has become more personal, and the end-user environment has improved. As a result, only 7.0%, or the smallest group, said "rely upon outside information brokers."

Table IV-10. Method of Using Databases at the Company (multiple replies)

	Person who needs the specific information searches for it himself		Another person in the same unit		Database search department is asked to do the search		Specialized searchers within the company are asked to do the search		Various patterns		Ask outside information brokers		Other	
	No. of replies	Ratio (%)	No. of replies	Ratio (%)	No. of replies	Ratio (%)	No. of replies	Ratio (%)	No. of replies	Ratio (%)	No. of replies	Ratio (%)	No. of replies	Ratio (%)
Total (N=417)	286	68.6	73	17.5	143	34.3	85	20.4	47	11.3	29	7.0	7	1.7

7. Plan for Database Usage in the Future

7.1 Future of Database Usage

Responding companies were asked for their opinions on the desired method of commercial database usage in the future. The results for both large companies and small- and medium-sized companies show that the "shift to free or cheaper services" remains the top item with more than half selecting this in each group. Nearly 60% of small- and medium-sized companies gave this reply, which demonstrates the high level of cost awareness among firms (Fig. IV-7).

This is followed by "seek to improve usage method to reduce cost." Again, there is a consistent drive to improve cost effectiveness. As the range of options for users widens, they naturally seek better service at a lower cost, so the reply "maintain the status quo" declined from more than 20% in the previous survey to half that ratio in this survey. In this survey, we included the item "switch to a service provided on the Internet," and nearly one-quarter of both large enterprises and small- and medium-sized enterprises selected this option.

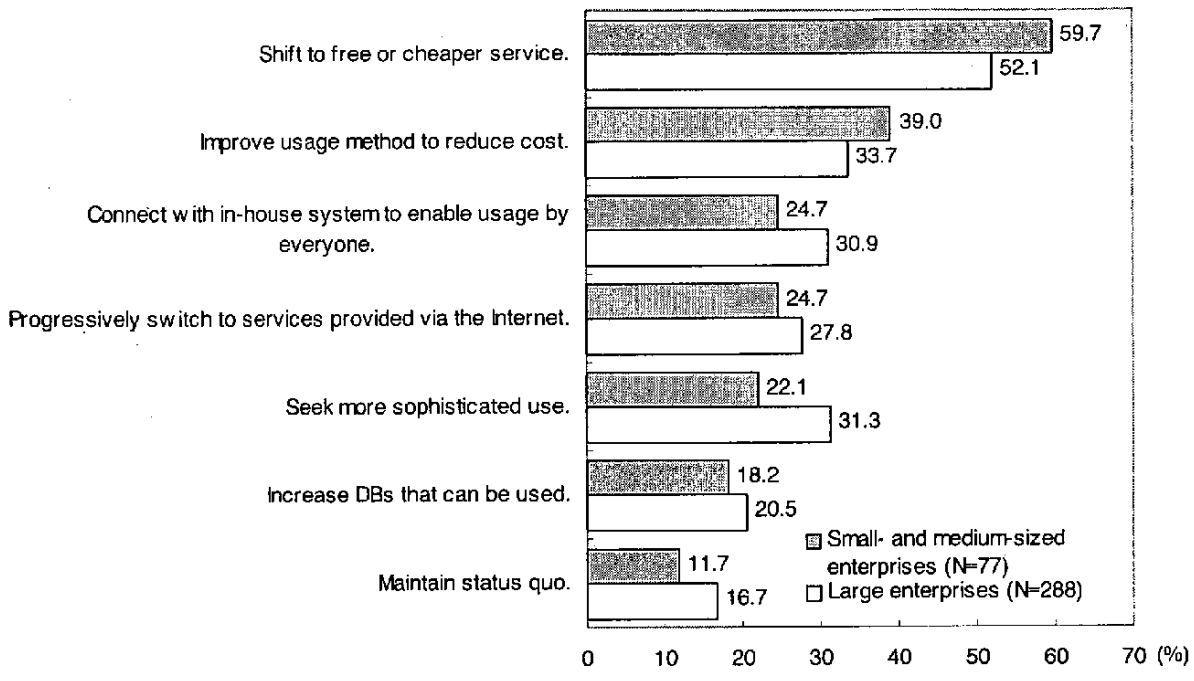


Fig. IV-7. Database Usage Methods Desired by Companies in the Future (multiple replies)

7.2 Database Services Desired by Users in the Future

We asked 347 companies that now use database services as well as 55 companies that do not use such services now but intend to do so in the future, regarding the database fields that they wish to use in the future. The results are shown in Table IV-11.

Among the firms that already use database services now, the priority needs are "corporate finance/profile" with 65.1%, "newspapers/journals/news" with 56.8%, and "patents" with 46.4%, in that order. The only change from the previous year among the top five is the switch in place between No.4 "who's who/organization information" and No.5 "markets and products."

Among the firms that plan to use database services in the future, "corporate finance/profile" came top with 65.5%, followed by "markets and products" with 45.5%, "newspapers/journals/news" with 43.6%, "overall(encyclopedia/bibliography/book guidance" and "administration/law/politics" with 34.5% each. Among the high-ranking items, "markets and products" has clearly risen in importance from the previous survey. Also "consumer and daily life related information" jumped by 16 points to move from No.10 last time to No.5 this time.

Table IV-11. Databases Fields Desired by Users in the Future (multiple replies)

(%)

	Currently using database (N=347)	Want to use in future (N=55)
Corporate finance/profile	65.1	65.5
Newspapers/journals/news	56.8	43.6
Patents	46.4	21.8
Who's who/organization information	43.8	29.1
Markets and products	43.2	45.5
Overall (encyclopedia/bibliography/book guidance)	31.1	34.5
Administration/law/politics	27.4	34.5
Medicine/pharmaceuticals/life science/biology	27.1	12.7
Electricity/electronics/information	25.4	16.4
Chemicals	24.8	9.1
Macroeconomics	22.8	18.2
Finance/securities/foreign exchange	21.6	32.7
Energy/natural resources	17.9	10.9
Consumer and daily life related information	15.0	32.7

8. Present Use of the Internet

8.1 Use of the Internet

Out of 591 responding companies, 568 companies or 96.1% replied that they are "currently using" it, while 2.7% said that they are "not using it now, but wish to do so in the future," while 1.2% said that "there is no need to use it in the future" or gave an unclear response. The ratio of firms that are "currently using" the Internet has risen steadily from 85.0% in the survey before last and 91.1% in the previous survey. Thus, use of the Internet is now taken for granted by firms.

8.2 Purpose and Content of Use

As for the purpose for using the Internet, 94.3% of 576 responding companies mentioned "E-mail," followed by "acquiring information from websites" with 86.1%, and by "disseminating company's information by own website" and "file transfer," in that order.

The fact that the top item in the previous survey "acquiring information from websites" (91.7% last time) declined by 5.6 points and replaced by "E-mail" shows that the priority of firms when introducing the Internet is for developing the in-house and liaison communications infrastructure within the company (Fig. IV-8).

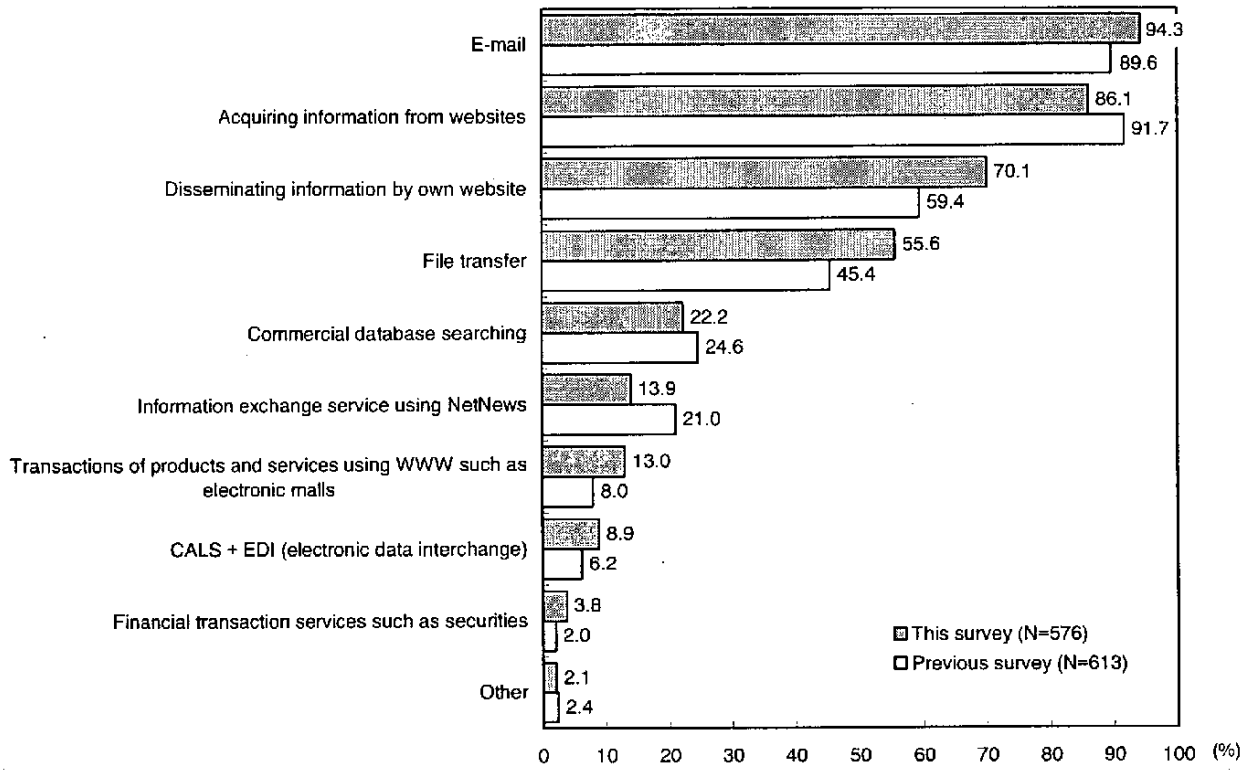


Fig. IV-8. Comparison of Purpose of Use of the Internet with the Previous Survey (multiple replies)

The responding companies were asked to name the service systems that they use for "commercial database searches," and high scores were achieved by "Nikkei Telecom" with 27 companies (21.1%), "JOIS" (including JOIS-Web) with 18 companies (14.1%), "DIALOG" (including DIALOG-Web) with 16 companies (12.5%), and "G-Search" with 8 companies (6.3%), and "PATOLIS" with 8 companies (6.3%).

We asked their views on promising types of Internet-based databases, both for users and vendors who provide services (with basically the same content) to compare the responses. The results are shown in Fig. IV-9.

Users and vendors basically agree in their forecast on "information search service using Web, telnet, etc." which was selected by nearly half of each group. Both groups showed about the same level of interest in "serving as a collection agency for charges of databases" (although the level of interest was low).

Additional items in this survey, namely "Internet advertising," "net auctions," and "agency services for creating websites," were cited by 30.6%, 14.4%, and 8.1% of responding companies, respectively. Businesses are thus intending to target electronic commerce and related items.

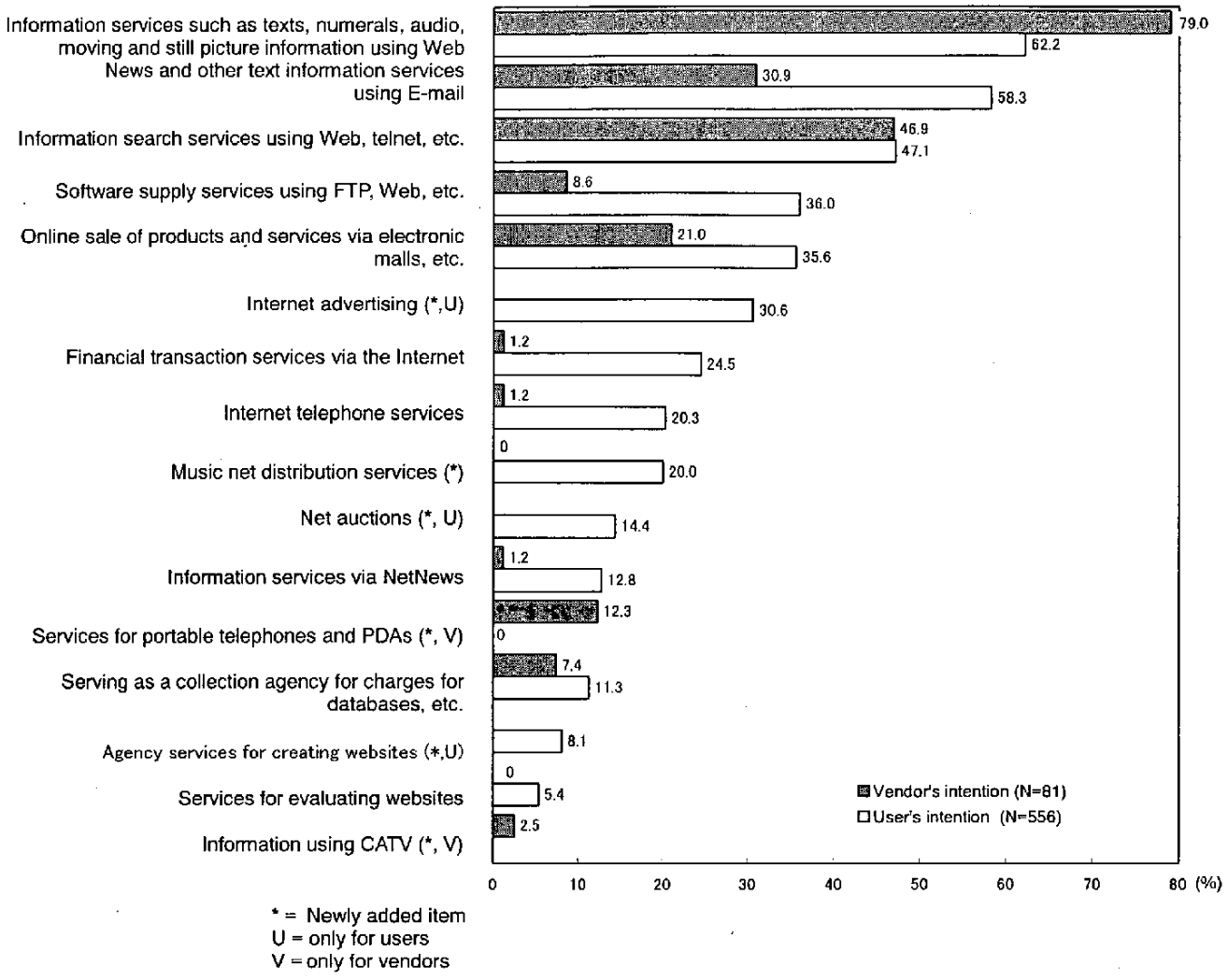


Fig. IV-9 Comparison of Promising Services via Internet with Results of Previous Survey (multiple replies)

8.3 Problems in Using the Internet

We asked the responding companies about their problems and concerns using the Internet. The top item was "concerns about security such as access from outside" with 85.7%, followed by "risk of leakage of private information and classified information" with 64.9%. Here again, problems related to security and privacy are of greatest concern in relation to the Internet. In future, when a vendor seeks to provide sophisticated services on the Internet, it must implement full security measures and take adequate steps to protect privacy. Such measures are indispensable to allay the fears of users.

8.4 Setting Up a Website

Out of 561 responding companies, 477 companies already have a website of their own, or 85.0% of the total. Fig. IV-10 shows the distribution of companies with a website by type of information made available. The results show that the top item cited by firms with a website is "company profile" with 94.5%, followed by "product/service information" (75.5%), "recruitment information" (55.1%), "press release materials" (39.6%), and "personnel information" (9.9%). On the other hand, only 2.9% made public "information on procurement of materials and parts." While it is not surprising that over 90% of the companies have a "company profile," the fact that a high proporrtion of them also have "product/service information" and "recruitment information" indicates that these companies are aware of the effectiveness of websites among Internet users.

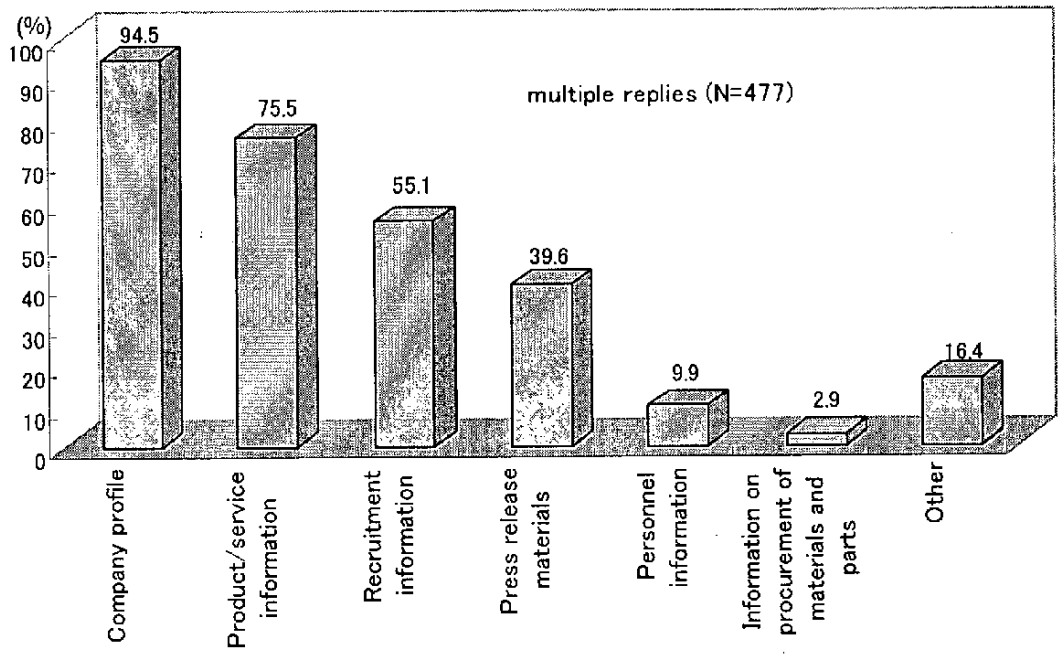


Fig. IV-10. Content of Information on Company Website (multiple replies)

9. Use of CD-ROM

CD-ROMs are a major media for offline use of commercial databases. 37.0% of 586 responding companies use commercial databases in the form of CD-ROM, a slight decrease of 1.8% from the previous survey. While the usage rate of CD-ROM has been rising steadily by 3 to 5 points in the last several years, the rate declined for the first time in this survey. When asked about their future intention, 34.9% of 358 companies that are not using CD-ROM databases now "plan to do so" in the future.

9.1 Fields in Which CD-ROMs Are Used

The fields in which CD-ROM databases are used most frequently are shown in Fig. IV-11. The highest usage rate was for "science and technology/patents," followed by "medicine and pharmacology/bio-industry/chemicals." "dictionary/encyclopedia/directory" which ranked No.1 in the previous survey declined to No.3 this time, superseded by "science and technology/patents," and "medicine and pharmacology/bio-industry/chemicals," which ranked No.2 and No.3, respectively, in the previous survey. The fact that "dictionary/encyclopedia/directory" and "bibliography, book and publication information" consistently rank much higher for CD-ROM databases than for online databases is due to the specific strengths and distinctive characteristics of CD-ROMs as a medium.

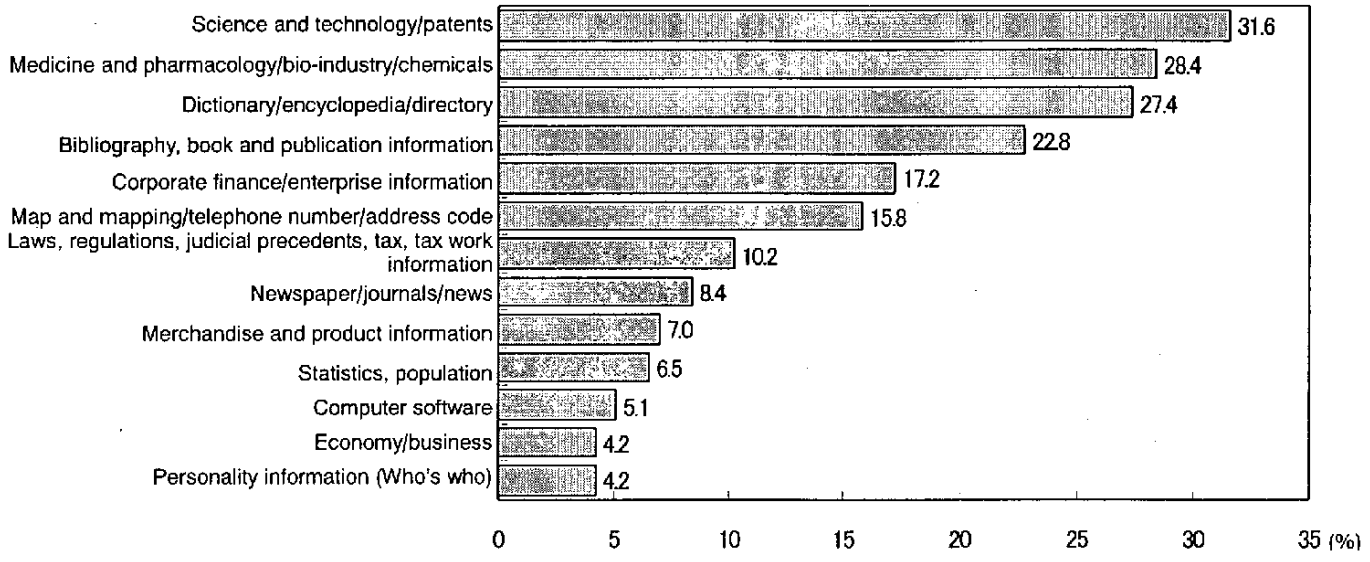


Fig. IV-11. Fields Where CD-ROM Databases Are Commonly Used at Present (N=215)

9.2 Reasons for Using CD-ROM

As to the reasons why firms use CD-ROMs, the top response among 210 responding enterprises was "space-saving compared to micro film and prints" with 55.2% giving this reply. This has been the top reply over the years without change. This was followed by "no communication cost" with 51.4% and "it has a single fixed price" with 47.6%. In the previous survey, "it has a single fixed price" was above "no communication cost," but this time, the positions reversed with "no communication cost" leading by 3.8 points. These two items exchange places nearly every year, so they are still two of the most important reasons why firms use CD-ROMs.

9.3 Inconveniences Related to Use of CD-ROM

The biggest source of inconvenience when using CD-ROMs is the "problem with frequency of updating information" with 60.7%. This represents a slight increase of 0.2 points from the previous survey (Fig. IV-12). Due to the production and distribution processes of CD-ROMs, there are inevitably some problems with the frequency of updating information. For users who are becoming accustomed to obtaining the latest information via online services, this problem of CD-ROMs is a significant source of inconvenience.

Two areas of difference from the previous survey were: "software (information in CD-ROM form) seems too expensive for value" which increased by 7 points, while "hardware price is too high" which decreased by 4.2 points. The increase in "software seems too expensive for value" may be due to the fact that users are now more used to using CD-ROMs, as well as to firms' emphasis on cost cutting in recent years, but it is difficult to reach a conclusion based on just one survey. "It is cumbersome to use," which was newly added in this survey, was selected by 10.5%.

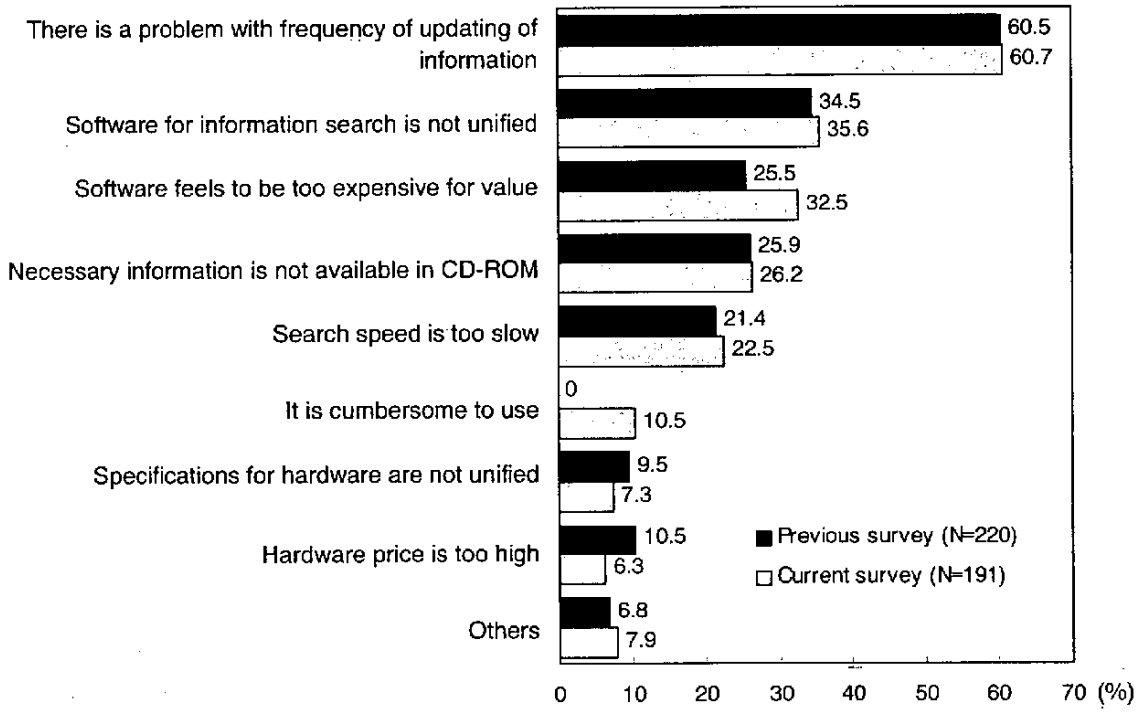


Fig. IV-12. Inconvenience in Use of CD-ROM (multiple replies)

V. State of Personal and Home Utilization

1. Introduction

Database Promotion Center, Japan (DPC) has been conducting the "Questionnaire Survey on the Status of Users of Commercial Databases by Individuals and Households" each year since 1994. This year, the Center carried out the survey between November 8 and 23, 1999.

The 25,000 survey samples were selected randomly from the registered members of NTT NaviSpace Corporation's "MY DIRECTORY" as of the end of October 1999. The survey was conducted by sending the questionnaire and a request for respondents' cooperation via E-mail. The responses were collected from the questionnaire website set up by Nikkei Research Inc. on the Internet. There were valid responses from 2,068 respondents.

2. Composition of Respondents

Because the survey was directed toward Internet users, the respondents as a group differed considerably from the composition of the general population. The characteristics of the survey respondents were as follows.

By gender, 67.3% of the 2,068 respondents were men, and 32.7% were women. By age grouping, those in their early 30's were the largest group accounting for 23.6%, followed by 21.4% in their late 30's. Combined, the respondents in their 30's accounted for over 40% of the total. They were followed by 26.5% in their 20's (7.4% in the early 20's and 19.1% in the late 20's), 20.6% in the 40's, and only 6.6% in the 50's and over.

By occupation, the largest group (25.9%) were salaried employees in technical positions, with salaried employees of all types (including directors) comprising 54.9% of the total. They were followed by full-time housewives (9.6%), self-employed and freelance professionals (7.9%), and students (6.1%).

3. Situation of Personal Use

3.1 Use of Commercial Databases

Of the 2,068 valid responses, 25.8% (534 persons) stated that they "have used a commercial database before." 18% (373 persons) said that they "use one now." 106 persons (5.1%) said that they "use a commercial database for which they have an individual contract." All of these figures represent decreases from the results of the previous survey.

As for the history of Internet usage of persons who have used a commercial database, about 40% of respondents with "more than 4 years" of Internet experience have used a commercial database, in contrast to about 10% each of those with Internet experience of "under 6 months" and

"between 6 months and 1 year." Thus, the longer the users' experience of using the Internet, the higher is the rate of using a commercial database. While the contrast is not as sharp, the same relationship holds for the ratio of those who use one now, and those use a database with an individual contract. The longer the experience of using the Internet, the higher are the rates for present use and contract use. Put another way, as Internet usage broadens and increases in the coming years, the potential usage of commercial databases and individual database contracts will grow (Fig. V-1).

3.2 Usage Time and Charge

Those respondents with an individual contract (106 persons) were asked in some detail how they actually use a commercial database personally. The results are shown in Fig. V-2.

As for the method of use of commercial databases, "access through the Internet" increased dramatically from the previous survey's figure of 57.4% to 82.1% (multiple replies). "Access from a personal computer communication service" declined from 53.4% to 34.0%. In terms of the duration of usage per week, the largest group (62.3%) use a commercial database for "under 30 minutes" per week, followed by "under 1 hour" (22.6%). The average usage time was 45 minutes per week.

Regarding the cost per week, the largest group or 59.4% use "under ¥1000," which is a decrease from 69.1% in the previous survey, but is still the dominant group.

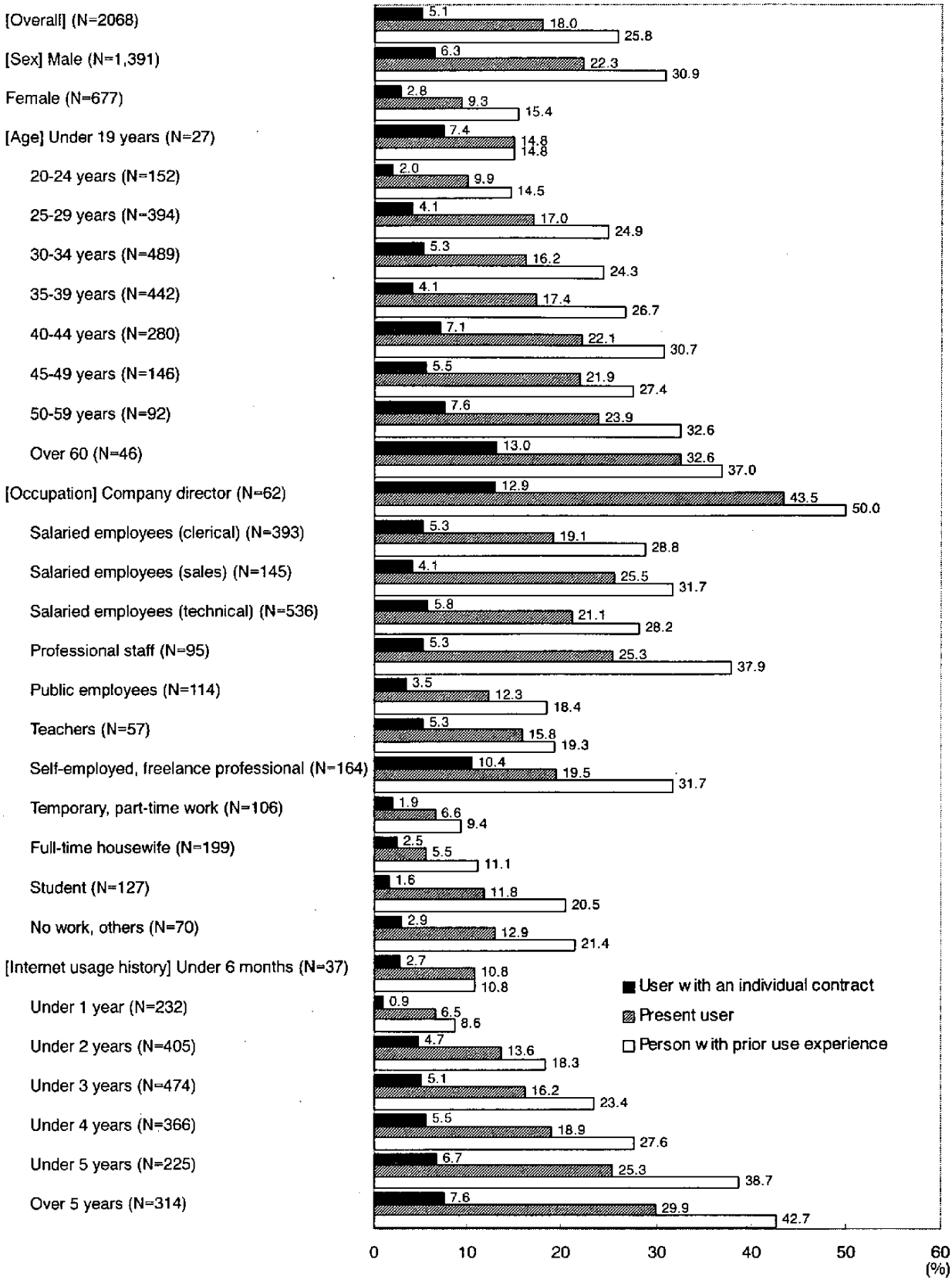
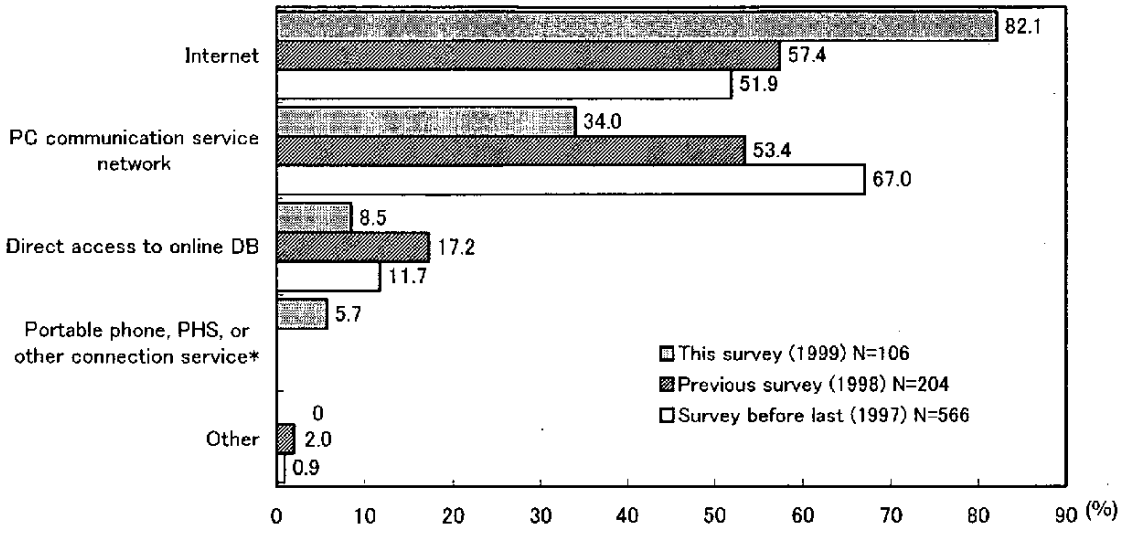


Fig. V-1. Status of Use of Commercial Database by Respondents' Characteristics



* Item newly added for this year's survey.

Fig. V-2. Method of Using Commercial Databases (Individual Contract Users, multiple replies)

The database that is most used with an individual contract was "Nikkei Shimbun Article Database" with 21.7%, followed by "COSMOS TEIKOKU DATABANK Corporate Information" (19.8%), "Asahi Shimbun Article Database" (17.9%), and "Music CD General Catalog (CD Journal)" (17.0%) (Table V-1).

By field of information used most frequently, "article research" was at the top with 48.1%, followed by "news" (41.5%), and "enterprise information, corporate finance" (37.7%). Others were "finance, stocks, and financial market information," "music information," "economic indicators and economic statistics," "travel, resorts and tourist spots," and "Who's who information," in that order.

Table V-1 Commercial Databases Used Often
(multiple replies: individual contract users: N=106)

Rank	Database	Component ratio (%)
1 (1)	Nikkei Shimbun Article Database	21.7 (22.1)
2 (2)	COSMOS (TEIKOKU DATABANK Corporate Information)	19.8 (16.2)
3 (3)	Asahi Shimbun Article Database	17.9 (13.2)
4 (-)	Music CD General Catalog (CD Journal)	17.0 (-)
5 (5)	TSR (TOKYO SHOKO RESEARCH Corporate Information)	10.4 (7.4)
5 (5)	Other domestic newspapers' articles	10.4 (7.4)
7 (4)	Mainichi Shimbun Article Database	8.5 (10.3)
7 (9)	WHO (Nichigai Associates)	8.5 (5.9)
7 (-)	National Tourist Information (Japan Tourist Association)	8.5 (-)
10 (5)	Yomiuri Shimbun Article Database	6.6 (7.4)

Note: The figures in parentheses show the rank order and usage ratio obtained in the previous survey.
(Respondents of the previous survey: N=204)

4. Evaluation of Commercial Databases

4.1 Evaluation of Cost and Contents

As for the opinions of users with an individual contract regarding the total cost (including connection charge, circuit use charge, and membership fee), the evaluation "somewhat dissatisfied" was the most common response with 28.3%. If those who were "dissatisfied" are added, 46.2% of users were dissatisfied to some degree, far exceeding the 30.2% who were "satisfied" or "somewhat satisfied." As for the evaluation of content, the largest group was "somewhat satisfied" with 49.1%; if those who were "satisfied" are added, 53.8% were satisfied to some extent, which is well above the combined total (26.5%) of "dissatisfied" and "somewhat dissatisfied" (Fig. V-3).

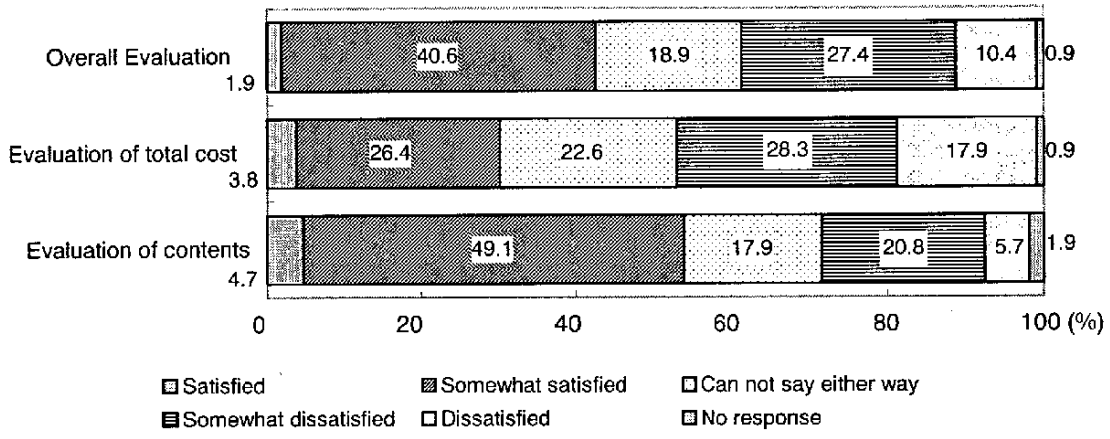


Fig. V-3. Evaluation of Commercial Databases (Individual Contract Users: N=106)

As for the overall evaluation of databases, "somewhat satisfied" came 40.6%; if the 1.9% who were "satisfied" are added on, 42.5% were satisfied to some degree. This is somewhat higher than the 37.8% who were "somewhat dissatisfied" and "dissatisfied." It appears that the strong sense of dissatisfaction about the total cost was offset to a significant extent by the higher level of satisfaction regarding the contents, and overall, "satisfied (to some extent)" came out somewhat stronger.

4.2 Areas of Dissatisfaction and Requests for Improvement

As for specific points of dissatisfaction and requests for improvement related to the use of commercial databases, the top complaint was "the usage charge is too high" with nearly 70% giving this reply. This was followed by "poor and inadequate database contents" (39.6%),"dissatisfaction with the charging system" (35.8%), "no database in the desired field" (33.0%) and "results unclear until you actually search" (30.2%). However, all of these other points of dissatisfaction are just one half of the rate for "usage charge is too high." When respondents were asked to cite the three most

important points of dissatisfaction or requests, "usage charge is too high" came top with 55.7%, followed by "dissatisfaction with the charging system" and "circuit charge is too high." Thus, items related to charges and costs were ranked top.

5. The Future of Commercial Databases

5.1 Future Usage Intentions

All 2,068 respondents were asked about their intentions to use commercial databases in the future. 1.5% "wish to use it actively" while those who "wish to use it to a certain extent" combined, 32.5% of respondents intend to use such databases. Considering that only 5.1% are users with an individual contract at present, there is good future potential.

Regarding future usage intentions (both "use actively" and "use to a certain extent") in terms of the respondents' present status of usage, there is a strong correlation. 50.2% of those who have experience of using a database wish to use databases in the future, and 84.0% of those with an individual contract wish to continue to using them in the future. Even among those with no prior experience, 26.2% or one out of four wishes to use databases in the future.

5.2 Information Fields that Respondents Wish to Use in the Future

As for the fields in which respondents wish to use databases in the future, the highest rate was for "medical care and health-related information" (24.9%) followed by "article search" (19.1%), "travel, resorts, tourist spots" (18.8%), "finance, stocks, financial market information" (18.3%), "encyclopedia, dictionaries" (17.6%), "natural science and technology information" (16.4%), "enterprise information, corporate finance" (16.4%), and "map information" (15.9%).

The preferences for information fields expressed in these intentions differed significantly by sex, age, and occupation grouping. While women generally have less interest in usage, they exceeded men in their intention to use databases in the fields of "cooking" and "education and culture." By age grouping, "medical care and health relation information" was selected by only 7.9% among respondents under 19 years, but was selected by 47.8% by those aged 60 years or older. Thus, the older the respondent, the higher the usage intention in this field.

Similarly, high ratings were given to "music information" and "video software information" by those under 19 years, to "cooking" by those in their 20's, to "education and culture" among those in their 40's and 50's, and "book information" among those over 60 years. By occupation, "enterprise information/corporate finance" was ranked top among company directors and salaried employees (sales).

Users of free information in various fields were also asked about their intention to use information that is provided for a fee in the same field. A high usage intention rate was shown for "natural science and technology information," "medical care and health information," "patent

information," "finance, stock, and financial market information," and "horse racing, bicycle racing, and pachinko information." So, for those persons who need information in these fields, free sources of information are not adequate, and users want more accurate and detailed information, even for a fee (Table V-2).

Table V-2. Intention to Use Data for a Fee among Users of Free Information in Various Fields

			No. of respondents (persons)	Fee-based DB usage intention (%)
Top 10 fields	1	Natural science and technology information	405	44.9
	2	Medical care and health related information	573	41.4
	3	Patent information	116	41.4
	4	Finance, stocks, financial market information	486	39.7
	5	Horse racing, bicycle racing, pachinko	217	39.6
	6	Enterprise information, corporate finance	434	35.5
	7	Social science, humanities	175	35.4
	8	Marketing information	295	35.3
	9	Other business and investment related information	205	34.6
	10	Education and cultural information	397	28.2
Bottom 10 fields	1	Weather information	1,342	5.0
	2	News	1,573	11.2
	3	Premiums and other public solicitations	1,471	11.7
	4	Train and other transportation schedules	943	11.8
	5	Theater and movie information	634	11.8
	6	Vacancy information for trains and airplanes	717	12.6
	7	Games, fortune telling	600	13.3
	8	Real estate (home) information	300	15.0
	9	Organization information	235	15.3
	10	Road and traffic information	763	16.6

Appendix

Table 1 Japanese Databases Accessible Overseas (2000: Producers)

Subject
①: Science and Technology
②: Economics, Business and Finance
③: General/Others

Language
J: Japanese
E: English
O: Others

Vendor Status
P: Producer
D: Distributor
A: Agent
T: Telecommunications Center

Medium
I: Internet
O: Online
M: MT, FD
C: CD-ROM, MO, DVD, etc.

Providing
①: Worldwide
②: North America
③: Europe
④: Asia and Australia
⑤: Others

* Please look at the home page of DPC as for the latest directory. (URL:http://www.dpc.or.jp)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
Asahi Shimbun Publishing Company(ASAHI SHIMBUN)	AERA Article Database	Articles from weekly journal AERA	③	J	P	O/M/C	②③④
	Asahi News Service	Distributing to Mead Database, FT Profile and Microsoft Network via New York Times Syndication Sales	③	E	P	O	①
	Asahi News Service	Distributing directly to C.W.N. (Chamber World Network)	③	E	P	O	①
	Asahi News Service(ANS)	Articles from 'Asahi Evening News'	③	E	P	O/M/C	②③④
	HIASK	Articles from Asahi Shimbun(Morning and Evening Editions) of 18 districts	③	J	P	O/M/C	②③④
Association of Agriculture and Forestry Statistics	Agriculture, Forestry & Fisheries Statistics	Statistics Data including Agricultural Census	②	J	P/D	M/C	④
AXESS INTERNATIONAL NETWORK INC.(AXESS)	DRS	Collection of 40,000 records on tours. such as C.I.Q., towns, hotels, air ports, weathers information	③	J	P	O	②③④
Brandy International Incorporated(Bii)	BRANDY	Online database service for searching domestic existing trademarks. Full-text is also available	①	J	P/D	O	
	Alpha-BRANDY	Online service for multiple search using trademark public data from the Japan Patent Office	①	J	P/D	O	
Database Promotion Center, Japan(DPC)	Database Directory	Electronic version of the 'Database Directory' compiled by MITI	③	J	P	M	①
Dun & Bradstreet Japan Ltd.(D&B)	Business Information Report	Credit information on Japanese companies	②	E	P/D	I/O	①
	WorldBase	Short Form Japanese Company Information	②	E	P/D	O/M/C	①
EDUCA Inc.(EDUCA)	Japanese Language Thesaurus	Directory of basic vocabularies in Japanese and English with examples	③	J/E	P	M	②
Electronic Devices Information Service Co.,Ltd.(ELISNET)	ELISNET	Various information on electronic devices, especially semiconductors	①	J/E	P/D	I/O/M/C	

Table 1 Japanese Databases Accessible Overseas(2000:Producers)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
ELECTRONIC LIBRARY Inc.(EL)	ELNET	59 newspapers and some 150 magazines (in Japanese). Articles are transmitted in their original from to user's fax machine	③	J	P/D	O	②③④
Financial Information Services Japan K.K.	FIS online Company Data Direct/U.S. & International	Internet-accessible, subscription service that provide 24,000 companies database in the world real-time EDGAR filing & Annual reports	②	E	P/D	I	④
	Mergent Company Data	"As-reported" Financial statement on more than 10,000 US. companies. Data can be download to spread sheet (Excel) format	②	E	P/D	C	④
	International Company Data	"As-reported" Financial on over 13,000 non-U.S. based companies in 100 countries	②	E	P/D	C	④
GfK Marketing Services Japan Ltd.	ACSISS-E	Online daily POS database of home appliances and durable consumers' goods obtained from 3,200 retailers in Japan	②	J	P/D	O/M	②③④
	ACSISS-E	Online daily POS database of home appliances and durable consumers' goods.	②	E	P/D	M	③
IBJ-NIKKO INFORMATION SYSTEMS, LTD.(INIS)	I.N.Economic Statistics Database	Information on statistics of economy, industry, and money	②	E	P	O	②③
Japan Association for International Chemical Information(JAICI)	Chem-J	Bibliographies of chemical literature published by Japanese chemical societies	①	E	P/D	M	②③
	NQRS	Numerical data of Nuclear Quadruple Resonance Spectrum (NQRS)	①	E	P/D	C	①
Japan Construction Information Center(JACIC)	JACIC homepage	Open Bid Announcements and Information for Construction Materials	②	J/E	P/D	I/O	①
Japan External Trade Organization(JETRO)	CYBER SHOWCASE	Visual products database	②	J/E	P	I	①
	Database of Research-based Industries in Japan	Database of Research-based Industries in Japan	②	J/E	P	I	①
	Governmental Procurement	Governmental Procurement on Official Gazette	②	J/E	P	I	①
	Information on mail order	Information on mail order	②	J	P	I	①
	Information on Medical and Welfare Equipment	Information on the procurement of medical and welfare goods by Tokyo Metropolitan Government, the City of Osaka and City of Yokohama	②	J/E	P	I	①
	Japan Market Report Database	Guide of Japanese Market	②	E	P	I	①
	Japan Trade Directory	List of Traders in Japan	②	E	P	C	①
	Potential Importers	List of Importers	②	E	P	I	①

Table 1 Japanese Databases Accessible Overseas(2000:Producers)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
Japan External Trade Organization(JETRO)	Profile Search for International Business Advisers	Profile of "INTERNATIONAL BUSINESS ADVISERS"	②	J/E	P	I	①
	Trade Fairs in Japan	List of fairs & exhibitions in Japan	②	J/E	P	I	①
	Trade Fairs Over seas	List of fairs & exhibitions in the world	②	J/E	P	I	①
	TTPP	Technology Tie-up Promotion Program	②	J/E	P	I	①
Japan Packaging Machinery Manufacturers Association(JPMA)	Japan Packaging Machine Guide	Packaging machinery and related equipment manufactured by JPMA members	①	J/E	P/D	C	①
JAPAN PATENT DATA SERVICE, CO.(JPDS)	FIRSTPLUS	Summary of Japanese Patents	①	J	P/D	C	②③④
	JP-NET	Japanese Patents	①	J	P/D	I/C	①
	PATENT	All page of Japanese Patents	①	J	P/D	C	②③④
Japan Patent Information Organization(Japio)	Design	Published bibliographic data of design applications to the Japanese Patent Office which are registered from 1965 ; Examination procedure records from 1964 ; Trial decision procedure records from 1982 and registration records from 1965.	①	J	P/D	I/O	②③④
	Japio	Published bibliographic data and abstracts in English of unexamined patent applications (filed by only Japanese applicants from 1976.)	①	E	P	M	②③
	PAJ/CD-ROM	Published bibliographic data and abstracts in English with representative drawing; Back File : From 1976 to 1993 in 69 technical fields basis, Front File : From 1994 in numerical order.	①	E	P/D	C	②③④
	Patent	Published bibliographic data of all patent applications to the Japanese Patent Office from 1955 ; Patent abstracts and representative drawings of first publications since 1971 ; Examination procedure records from 1964 ; Trial decision procedure records from 1982 and registration records from 1967.	①	J/E	P/D	I/O	②③④
	Trademark	Bibliographic data and specimens of trademark and service mark applications which are filed or valid to the Japanese Patent Office ; Examination procedure records from 1964 ; Trial decision procedure records from 1982 and registration records from 1897.	①	J	P/D	I/O	②③④

Table 1 Japanese Databases Accessible Overseas(2000:Producers)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
Japan Patent Information Organization(Japio)	Utility Model	Published bibliographic data of all utility model applications to the Japanese Patent Office from 1960 ; Utility model summaries and representative drawings of first publication since 1980 ; Examination procedure records from 1964 ; Trial decision procedure records from 1982 and registration records from 1972.	①	J/E	P/D	I/O	②③④
Japan Science and Technology Corporation(JST)	JCATALOG	Machine-readable catalog of JST Library collection	①	J	P/D	I/O/C	①
	JCHEM	Database of Chemical terms numbers, molecular formulas and so on	①	J	P/D	I/O	①
	JICST	Bibliographic Information, with abstracts and indexing in the all area of Sci. & Tech.	①	J	P/D	I/O/M/C	①
	JICST-E	English Bibliographic indexing data on all fields of Sci & Tech in Japan	①	E	P/D	I/O	①
	JICST-EPlus	English bibliographic database with indexed and non-indexed on all fields of Sci & Tech in Japan	①	E	P/D	I/O	①
	JMEDICINE	Bibliographic Information with abstracts and indexing in the Medicine	①	J	P/D	I/O	①
	JQUICK	Bibliographic Data with non-indexed in JICST File	①	J	P/D	I/O	①
Japan Small and Medium Enterprise Corporation(JASMEC)	Business Matching Database	Database for foreign companies to find Japanese Small and Medium Enterprise business partner	②	E	P	I	①
KAHOKU SHIMPO PUBLISHING CO.	KD	Database of articles	③	J	P	O	①
K.K. Kyodo News	Kyodo Real time News(JLS)	24 hour real-time financial & economic news	②	J	P	O	①
Market Information Center for Perishable Food(MICPF)	Market Information service for Perishable Food	Wholesale Market Information of Fruits Vegetables, Meats and Cut Flowers	②	J	P	I/M/C	④
Marketing Intelligence Corporation(MiC)	MAI Alcohol	Comprehensive coverage of alcohol sales	②	J/E	P	M	①
	MPI Pet food	POS and audit data	②	J/E	P	M	①
	SCI Consumer	Nationwide household data on daily purchases of FMCGS	②	J/E	P	M	①
	SDI Annual Report	Sales trend data of OTC drug market	②	J/E	P	M	①
	SLI Consumer	Extensive data on women's products	②	J/E	P	M	①
Marketing Intelligence Corporation(MiC)	SRI Retail	POS and store audit data covering all FMCGS	②	J/E	P	M	①

Table 1 Japanese Databases Accessible Overseas(2000:Producers)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
MARUZEN CO.,LTD.	Knowledge Worker	Bibliographic information on Japanese and Foreign books	③	J/E	P/D	I/O	①
Media Research Center, Inc.(MRC)	MEDIA DATA JAPAN, MAGAZINE EDITION	Advertising rates and data of consumer and business magazines	③	J	P/D	M	①
	MEDIA DATA JAPAN, NEWSPAPER EDITION	Advertising rates and data of consumer and business newspapers	③	J	P/D	M	
	NAVI(quarterly journal)	Quarterly Journal specialized software by DATAWARE TECHNOLOGIES, Equivalent in ISO 9660 and HIS(multi-operating system)	③	J	P/D	C	
Metro Inc.	FAMILIS	Personal names, addresses, telephone numbers, ages, etc. extracted from various directories and survey data	③	J	P	M	②
National Diet Library(NDL)	JAPAN/MARC	Machine-readable catalog of books and serials published in Japan	③	J	P	M	②
	JAPAN/MARC on Disc(J-BISC)	Bibliographic retrieval database for books published in Japan	③	J	P	C	①
	NDL CD-ROM LINE Japanese Periodicals Index	Bibliographic information retrieval database for articles in Japanese periodicals	③	J	P	C	①
	NDL CD-ROM LINE Serials	Bibliographic retrieval database for serials by CD-ROM	③	J/E	P	C	①
National Institute of Informatics(NII)	Academic Conference Papers	Citations with abstracts of conference papers presented to conferences and meetings of the academic societies	①	J/E	P/D	I/O	①
	Calendar of Academic Conferences, compiled by Science Council of Japan	Calendar of international conferences involving academic societies which are registered in Science Council of Japan	①	J/E/O	P/D	I/O	①
	Citation Database for Japanese Papers	Citations in fields of science and engineering published in Japan	①	J/E	P/D	I/O	①
	Clinical Case Reports	Fulltext of scientific papers in the field of clinical medicine	①	J/E	P/D	I/O	①
	Current Contents of Academic Serials in Japan	Current contents of academic serials in all fields in Japan	①	J/E/O	P/D	I/O	①
	Database Directory	Directory of databases created by and/or served at universities in Japan	①③	J	P/D	I/O	①
	Directory of Researchers	Information on research subjects, papers, etc. of researchers in universities	①	J/E	P/D	I/O	①
	Dissertation Index	Index to doctoral theses submitted to universities in Japan	①	J/E	P/D	I/O	①
	Economic Titles Japan	Bibliographic citations of literature on economics	①②	J/E/O	P/D	I/O	①

Table 1 Japanese Databases Accessible Overseas(2000:Producers)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
National Institute of Informatics(NII)	Grant-in-Aid Scientific Research	Research project information with abstracts on research subsidized by Grant-in-Aid Scientific Research, Ministry of Education, Science, Sports and Culture	①	J/E	P/D	I/O	①
	Private Grants-in-Aid Research	Research project information with abstracts on grant-in-aid scientific research subsidized by private foundations	①②	J/E	P/D	I/O	①
	Register of Grant-in-Aid Scientific Research	Research themes funded by Grant-in-Aid Scientific Research	①	J	P/D	I/O	①
	Scientific Papers (Series 1: Electronics)	Fulltext of scientific papers in the field of electronics	①	J/E	P/D	I/O	①
	Scientific Papers (Series 2: Chemistry)	Fulltext of scientific papers in the field of chemistry	①	J/E	P/D	I/O	①
	Scientific Papers (Series 5: Physical Sciences)	Fulltext of scientific papers in the field of physical sciences	①	J/E	P/D	I/O	①
	Union Catalog of Books	Union catalog of books held by university libraries in Japan	①②③	J/E/O	P/D	I/O	①
	Union Catalog of Serials	Union catalog of serials held by university libraries in Japan	①②③	J/E/O	P/D	I/O	①
New Glass Forum(NGF)	International Glass Database「INTERGLAD」	Fact data on the relation between composition and properties of glass	①	J/E	P/D	I/C	①
Nichigai Associates,Inc.	NICHIGAI/WEB SERVICE BOOKPLUS	Contains information of the Japanese books published after 1925. Also provides their cover image of newly published books. [weekly update]	③	J	P/D	I	①
	NICHIGAI/WEB SERVICE Computer/Technical Term/Business English	Unique online dictionary. E>J 44,000 words, J>E 46,000 words. Also provides over 40,000 examples. [monthly update]	③	J	P/D	I	①
	NICHIGAI/WEB SERVICE Journal Index	Index to articles since 1981, more than 1,300 popular Japanese journals or magazines. [weekly update]	③	J	P/D	I	①
	NICHIGAI/WEB SERVICE MAGAZINEPLUS	Largest magazine index database in Japan. Covers Zasshi Kiji Sakuin and Journal Index and more. [weekly update]	③	J	P/D	I	①
	NICHIGAI/WEB SERVICE PRIZE	Information of 2,400 Japanese prizes in various fields, with over 160,000 prizewinner's profiles. [monthly update]	③	J	P/D	I	①
	NICHIGAI/WEB SERVICE WHO	Most popular WHO'S WHO in Japan after Meiji era. Provides key person's profiles and related materials. Not only Japanese big names but also foreigners or persons passed away. [weekly update]	③	J	P/D	I	①

Table 1 Japanese Databases Accessible Overseas(2000:Producers)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
Nichigai Associates,Inc.	NICHIGAI/WEB SERVICE WHO Ⅰ	From WHO, WHO Ⅰ provides the fields of Economics, Social, or Politics. Profiles and related materials. [weekly update]	③	J	P/D	I	①
	NICHIGAI/WEB SERVICE WHO Ⅱ	From WHO, WHO Ⅱ provides the fields of Academics, Journalism. Profiles and related materials. [weekly update]	③	J	P/D	I	①
	NICHIGAI/WEB SERVICE WHO Ⅲ	From WHO, WHO Ⅲ provides the fields of Arts, Entertainment, or Sports. Profiles and related materials. [weekly update]	③	J	P/D	I	①
	NICHIGAI/WEB SERVICE Writer's WHO'S WHO	Biographical information of 80,000 writers or journalists in Japan. [monthly update]	③	J	P/D	I	①
	NICHIGAI/WEB SERVICE Zasshi Kiji Sakuin (Japanese Periodicals Index)	Index to articles since 1985 over 5,000 magazines in Japan collected by National Diet Library. [update twice a month]	③	J	P/D	I	①
	NICHIGAI ASSIST BOOK/MONTHLY	Information of newly published books in a month in Japan. [monthly update]	③	J	P/D	O	①
	NICHIGAI ASSIST BOOKPLUS	Contains information of the Japanese books published after 1925. Also provides their cover image of newly published books. [weekly update]	③	J	P/D	O	①
	NICHIGAI ASSIST Historical WHO Foreign	Names and Profiles of historical person in Occidental. Also provides related materials and literatures.	③	J	P/D	O	①
	NICHIGAI ASSIST Historical WHO Japan	Names and Profiles of historical person in Japan. Also provides related materials and literatures.	③	J	P/D	O	①
	NICHIGAI ASSIST JOINT	Domestic economical magazines information from 1981 to 1995.	③	J	P/D	O	①
	NICHIGAI ASSIST Journal Index	Index to articles since 1981, more than 1,300 popular Japanese journals or magazines. [weekly update]	③	J	P/D	O	①
	NICHIGAI ASSIST KSK	Industrial article database from 1984 to nowadays over the world.	③	J	P/D	O	①
	NICHIGAI ASSIST MAGAZINEPLUS	Largest magazine index database in Japan. Covers Zasshi Kiji Sakuin and Journal Index and more. [weekly update]	③	J	P/D	O	①
	NICHIGAI ASSIST NDL Zasshi Kiji Sakuin	Index to articles since 1985 over 5,000 magazines in Japan collected by National Diet Library. [update twice a month]	③	J	P/D	O	①

Table 1 Japanese Databases Accessible Overseas(2000:Producers)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
Nichigai Associates,Inc.	NICHIGAI ASSIST WHO	Most popular WHO'S WHO in Japan after Meiji era. Provides key person's profiles and related materials. Not only Japanese big names but also foreigners or persons passed away. [weekly update]	③	J	P/D	O	①
	WEB/NICHIGAI ASSIST Web BOOKPLUS	Contains information of the Japanese books published after 1925. Also provides their cover image of newly published books.[weekly update]	③	J	P/D	I	①
	WEB/NICHIGAI ASSIST Web MAGAZINEPLUS	Largest magazine index database in Japan. Covers Zasshi Kiji Sakuin and Journal Index and more.[weekly update]	③	J	P/D	I	①
	WEB/NICHIGAI ASSIST Web WHO	Most popular WHO'S WHO in Japan after Meiji era. Provides key person's profiles and related materials. Not only Japanese big names but also foreigners or persons passed away. [weekly update]	③	J	P/D	I	①
NIHON KEIZAI SHIMBUN, INC.(NIKKEI)	Commodity Domestic Market Data	Price data and demand/supply data of major commodities market conditions (daily, weekly and monthly)	②	J/E	P/D	O/M	③
	Consumer Radar	Originally obtained data on the attitudes and reality of consumer behavior toward financial issues	②	J	P/D	O/M/C	②④
	Consumer Statistics Data	7,000 series of statistical data on consumer price from the General Affairs Agency	②	J/E	P/D	O	②④
	Corporate Action Related Data	Data related to new stock issuing such as patterns of fund raising, increase and decrease of capital, stock split, and other information on fund raising for listed companies	②	J/E	P/D	O/M	②④
	Corporate Profile Data	Description of Japanese major companies. Data elements such as name of CEOs, address, telephone number, year established, outline of business, major stock holders, summarized financial data, sales by line of business, are included	②	J/E	P/D	O/M/C	②④
	Daily Exchange Rate & Interest Rate Data	Daily data of foreign and domestic exchanges	②	J/E	P/D	O/M	②④
	Earnings Estimate for Listed/OTC Companies	Estimated and actual data of balance of settlements of accounts at the end of fiscal year, interim closing, and consolidated financial statements for listed/OTC companies	②	J/E	P/D	O/M	②④
	Economic Data by Size	Economic statistical data by size of small-to-medium sized companies based on data from the Small and Medium Enterprises Agency and the Smaller Business Finance Corporation	②	J/E	P/D	O/M	②④

Table 1 Japanese Databases Accessible Overseas(2000:Producers)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
NIHON KEIZAI SHIMBUN, INC.(NIKKEI)	Energy Data	Demand/supply data and cost data on petroleum, coal, electric, gas, and nuclear power, as well as general economic statistical data	②	J/E	P/D	O/M	②④
	Financial Statement for Banks	Balance of settlements of accounts for banks since 1974	②	J/E	P/D	O/M/C	②④
	Financial Statement for Insurance Companies	Balance of settlements of accounts for non-life insurance companies submitted to the Ministry of Finance since 1983	②	J/E	P/D	O/M/C	②④
	Financial Statement for Listed Companies	Balance of settlements of accounts at the end of fiscal year, interim closing, and consolidated financial statements, since 1964, for listed companies other than banks, securities houses, and insurance companies	②	J/E	P/D	O/M/C	②④
	Financial Statement for Security Houses	Balance of settlements of accounts for security houses submitted to the Ministry of Finance	②	J/E	P/D	O/M/C	②④
	Financial Statement for Unlisted Companies	Financial report information submitted to the Ministry of Finance by unlisted major companies since 1977	②	J/E	P/D	O/M/C	②④
	Flash Financial Report for Listed Companies	Balance of settlements of accounts at the end of fiscal year, interim closing, and consolidated financial statements for listed companies other than banks security houses, and insurance companies, as disclosed	②	J/E	P/D	O/M	②④
	Futures/Option Data	Trading and price data of bond futures, stock price index futures and stock price index options	②	J/E	P/D	O/M	②④
	Industrial Data	Statistical data on various industry obtained from MITI and industrial associations	②	J/E	P/D	O/M	②④
	International Trade Statistics	International trade statistics of commodities and countries based on the Ministry of Finance data	②	J/E	P/D	O	②④
	Japanese Economic Model	Quarterly model of short-term forecast for Japanese economy, integrating the hole aspects of Japanese economy including energy and finance. Monthly 'Standard Forecasts' with updated information is provided, capable of customized simulation	②	J/E	P/D	O	②④
	Major Market Indices Data /Technical Indices for Industries and Each Issue	Nikkei stock price average data, volume of margin transactions for three exchanges, and others	②	J/E	P/D	O/M	②④
	Marketing Report for Unlisted Companies	Marketing report information submitted to the Ministry of Finance by unlisted major companies since 1977	②	J/E	P/D	O	②④

Table 1 Japanese Databases Accessible Overseas(2000:Producers)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
NIHON KEIZAI SHIMBUN, INC.(NIKKEI)	News Flash	Real-time daily news from all over the world, categorized by subject	③	J/E	P/D	O	②④
	Newspapers for Text Search	Articles from newspapers including four Nikkei publications	③	J/E	P/D	O	②④
	Nikkei Macro Economic Statistics	15.000 major national statistics of Japanese economy including statistics of earnings, production, corporate management, finance, international trade, international balance of payments, labor, commodity prices, and consumption	②	J/E	P/D	O/M	②④
	Nikkei Monetary Databank	Major economic statistical data including money supply, interest rates, capital circulation, and other general financial statistics	②	J/E	P/D	O/M	②④
	Personnel Data Bank	Personnel data of executives of major companies and managing staff of government employees. Data elements such as title, place of employment, birth date, educational history, graduate data are included	②	J	P/D	O/M	②④
	Portfolio Related Data Service	Various indices on risks and returns in Japanese and US stock market investment with portfolio evaluation and optimization system	②	J/E	P/D	O	②④
	POS Data	POS data of 1,600,000 items including foods, household appliances, and others obtained from 670 stores	②	J	P/D	O	②④
	Regional Databank	Regional data including area, population, housing, land price, number of establishments by industry, and shipments for 3,400 cities, towns, and villages	②	J/E	P/D	O	②④
	Regional Economic and Financial File	Regional market data including industry, finance, local public finance, consumption, commodity price, labor, and commerce for the metropolises and districts	②	J/E	P/D	O	②④
	Statistical Data of Prices	Wholesale price indices, import price indices, and input-output indices from the Bank of Japan	②	J/E	P/D	O	②④
	Statistics on Construction	Statistics on orders received, starting works, cost of construction, and other construction related statistical data	②	J/E	P/D	O/M	②④
	Statistics on Corporations	Estimated statistical data based on 'Statistics on Corporations', published by the Ministry of Finance, updated quarterly	②	J/E	P/D	O/M	②④
	Statistics on Products, Shipments, and Inventory	Statistics on products, shipments, and inventory based on MITI's data	②	J/E	P/D	O/M	②④

Table 1 Japanese Databases Accessible Overseas(2000:Producers)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
NIHON KEIZAI SHIMBUN, INC.(NIKKEI)	Stock Bond Data	Stock data of listed companies and over-the-counter trading in national stock market and bond data for Tokyo and Osaka Exchanges	②	J/E	P/D	O/M	②④
	Unlisted Debenture Data	Evaluated market price of unlisted public offering debenture calculated based on the circular notice from the Ministry of Finance	②	J/E	P/D	O/M	②④
Nippon Statistics Center Ltd.(NSC)	City / Town / Village District-Units	About 900 items of social economic	②	J/E	P/D	M/C	②
	Smallest District-Units	About 200 items of social economic	②	J/E	P/D	M/C	②
Nomura Research Institute, Ltd.(NRI)	DataLine, IDS	Macroeconomic Database Equity Database; Bond Database; NOMURA Index Database	②	J/E	P/D	O	②③
	FAST	Financial results and indicators of Japanese companies	②	J/E	P/D	C	③
Nomura Research Institute, Ltd.(NRI)	NRI/E	Information of Japanese Economy, Industry, and Finance	②	E	P	O	③
NTT Visual Communication Systems Inc.(NTT-V)	The Accommodations Reservation Information Service	Free access to information on a wide selection of accommodations throughout Japan	②	J	P/D	I/O	①
Osaka City Foundation for Urban Technology	OSAKA-UE File	Offer the urban engineering information Osaka City through JICST online service	①	J	P	O	
Protein Research Foundation(PRF)	PRF/LITDB	Literature database related to peptides and proteins	①	E	P/D	O/M/C	①
	PRF/SEQDB	Amino acids sequence database (peptides & proteins)	①	E	P/D	O/M/C	①
	PRF/SYNDB	Chemically synthesized Compound database (peptides)	①	E	P/D	O/M/C	①
QUICK Corp.	QUICK-IS	QUICK-IS a comprehensive financial information service which provides stable data delivery and easy data manipulation through PC in the environment best fit for each customer, i .e. Client/Server system, remote system or customer's Local Area Network and so on. The basic service is classified into QUICK-IS Level Ⅰ, QUICK-IS Level Ⅱ, IS-Web, and wide range of information and function options, like dynamic data exchange, various analysis services, order routing, e-mail etc., are also available	②	J/E Numeric	P/D	O	②③④⑤
Research Institute of Human Engineering for Quality Life(HQL)	Body Size Database	Measurement data of 34,000 Japanese persons, surveyed from 1992 to 1994. The measurement data contains 178 measurements per subject	①	J/E	P/D	I/M/C	②

Table 1 Japanese Databases Accessible Overseas(2000:Producers)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
Research Institute of Human Engineering for Quality Life(HQL)	3 Dimensional Database	Base of body size data. This data by the format of DXF and IGES PC files	①	J/E	P/D	M/C	
RESEARCH ORGANIZATION FOR INFORMATION OF SCIENCE & TECHNOLOGY(RIST)	ATOMICA, Encyclopedia on Nuclear Energy	A Database of Atomic Energy Information for Promotion of Public Acceptance Through Internet	①	J	P/D	O	
Rural Culture Association	Diagnosis and Control of Disease and Insect Pest	130 Kinds of crop 1600 disease and insect pest diagnoses and control	③	J	P/D	O/C	
	Gendai Nougyou(The contemporary Agriculture)	Monthly journal 'Gendai Nougyou' title retrieval	③	J	P/D	O/C	
	Nougyou Gijutsu Taikei(The Encyclopedia of Agricultural Technology)	Nogyou Gijutsu Taikei' title retrieval	③	J	P/D	O/C	
	The CD-ROM of Agricultural Chemical 1996	Japanese Agricultural Chemical retrieval	③	J	P/D	C	
	The Complete Works of Japanese Dietary Habits	Interview Research of Japanese Dietary Habits over 60 years ago	③	J	P/D	O/C	
Technomics, Inc.	Pharmcast Data	Information on medicines and pharmaceuticals	①②	E	P	M	②③
TEIKOKU DATABANK, LTD.(TDB)	COSMOS1	Financial data of 430,000 Japanese companies, including 2,300,000 statements	②	E	P	O/M/C	
	COSMOS2	Descriptive information of 250,000 Japanese companies	②	E	P	O/M/C	
The Energy Data and Modelling Center, The Institute of Energy Economics, Japan(EDMC)	APEC Energy Database	Historical Energy Demand & Supply Data in APEC Region	③	E	P/D	I	①
The Foundation of Kyushu Industrial Technology Center(KITEC)	Researcher information	Information on researchers in science and engineering fields at national universities in Kyushu and researchers at national and prefectural test and research institutions	①	J	P	I	①
The Japan Shipping Exchange, Inc. (JSE)	JMIS(Japan Maritime Information Service)	Data of c.a. 13,000 vessels of Japanese flag and data of 9,000 maritime related companies, shipowners, shipbuilders & c. in Japan	②	J/E	P/D	M/C	①
The Japan Times, Ltd.	Japan Times in The Nikkei-Telecom Japan News & Retrieval	Major world, domestic news, Art, Sports and Editorial descriptions selected from daily English Newspaper "The Japan Times"	③	E	P	O	②
THE MAINICHI NEWSPAPERS(Mainichi INTERACTIVE)	Mainichi Daily News Database	articles of Mainichi Daily News	③	E	P	O	②
	Mainichi Newspapers Database	articles of Mainichi Newspapers	③	J	P	O	②③

Table 1 Japanese Databases Accessible Overseas(2000:Producers)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
THE MAINICHI NEWSPAPERS(Mainichi INTERACTIVE)	News Release NAVI	Information providing services on press release from companies	②	J	P	O	②④
	Rating Information Service s	Financial rating information on companies	②	J	P	O	②④
THE YOMIURI SHIMBUN	THE DAILY YOMIURI DATABASE	Electronic version of 'The Daily Yomiuri' a Newspaper written in English	③	E	P	O	②③
	YOMIDAS	Articles from Yomiuri Shimbun including Tokyo, Osaka, Western, and Central versions	③	J	P	O	②③
TKC Corporation(TKC)	LEX/DB	Precedent Database	③	J	P/D	I/C	
TOHAN CO., LTD	Publishing Information	About 1,500,000 books (Japanese) Information	③	J	P/D	O/C	
TOKYO SHOKO RESEARCH, LTD.(TSR)	CD-ROM JAPAN 250,000	CD-ROM Japan 250,000 contains information on the 250,000 largest Japanese businesses	②	E	P	C	②③④
	tsr-van2	Business information including financial, bankrupt data on 1.3 million companies in Japan	②	J	P	I	①
	World Base	Short Form Japanese Company Information	②	E	P	O/M/C	①
TOYO KEIZAI INC.	Company basic	Company basic data of all listed and OTC Companies	②	J/E	P/D	I/M/C	①
	Estimate	Estimate of business performance of all listed and OTC Companies	②	J/E	P/D	I/O/M/C	①
	Fundamental (Tanshin)	News flash edition of financial report of all listed and OTC Companies	②	J/E	P/D	I/O/M/C	①
	Fundamental (Yuho)	Final edition of financial report of all listed and OTC Companies	②	J/E	P/D	I/M/C	①
	Major Shareholders	Top 20 shareholders data of all listed and OTC Companies	②	J/E	P/D	M/C	①

Appendix

Table 2 Japanese Databases Accessible Overseas (2000: Distributors/Agents)

Subject
①: Science and Technology
②: Economics, Business and Finance
③: General/Others

Language
J: Japanese
E: English
O: Others

Vendor Status
P: Producer
D: Distributor
A: Agent
T: Telecommunications Center

Medium
I: Internet
O: Online
M: MT, FD
C: CD-ROM, MO, DVD, etc.

Providing
①: Worldwide
②: North America
③: Europe
④: Asia and Australia
⑤: Others

* Please look at the home page of DPC as for the latest directory. (URL:http://www.dpc.or.jp)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
DENTSU INC.	ELNET	Articles, with full-text image data, from 59 Japanese major newspapers and from 150 Japanese journals including monthly economic reports	③	J	A	O/C	②③④
FUJITSU LIMITED	ADMINISTRATIVE REFORM COMMITTEE'S BULLETIN	Prompt reports of Administrative Reform Council's discussion and announcement. The Council started at Dec.19, 1994	③	J	A	O	①
	AERA	Collection of articles from weekly magazine 'AERA'	③	J	A	O	①
	ASAHI ONLINE DATABASE	Collection of articles in English from 'Asahi Evening News' and English version of 'Asahi News Services'	③	E	A	O	①
	Asahi Shimbun Database	Contains the full text of 'Asahi Shimbun'	③	J	A	O	①
	BOOK/MONTHLY	Provides the information of the new books available in Japan	③	J	A	O	①
	BOOKPLUS	Contains the title, outline, author, publisher and price of the books published in Japan	③	J	A	O	①
	Bulletin of Administrative Reform Committee's Minutes	Provides the outline of bulletin of Administrative Reform Committee's Minutes	③	J	A	O	①
	Chugoku Shimbun Database	Collection of articles from 'Chugoku Shimbun'	③	J	A	O	①
	Chunich Shimbun Database	Collection of the articles of Chunich Shimbun	③	J	A	O	①
	Company Information by Teikoku Databank	Profiles of more than 1,100,000 companies in Japan	②	J	A	O	①
	Company Information by Tokyo Shoko Research	Profiles with performance information for current three years of more than 1,020,000 companies in Japan	②	J	A	O	①
	Company Information Retrieval Service	Cross-file retrieval system from several databases of newspapers and company profiles	②	J	A	O	①

Table 2 Japanese Databases Accessible Overseas(2000:Distributors/Agents)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
FUJITSU LIMITED	Cross-File Retrieval of Company Information	Cross-file retrieval system from eight company databases	②	J	A	O	①
	Cross-File Retrieval of National Newspapers	Cross-File retrieval system from three database. Provides articles in the last two years	③	J	A	O	①
	Database of Directories	Bibliographic information and general description on directories published in Japan	②	J	A	O	①
	Decentralization Promotion Committee's Bulletin	Prompt reports of Decentralization Promotion Committee's discussion and announcement	③	J	A	O	①
	DIAMOND Personnel Directory of Companies	Personnel directory of major companies in Japan with personnel changes and corporate structure	②	J	A	O	①
	DNN INFORMATION INDUSTRY TODAY	Collection of articles from "DAILY NETWORK NEWS" and by-weekly "IBM WATCHING" published by Network News CO.,LTD.	③	J	A	O	①
	ECONOMIST	Electronic version of 'Economist' Journal, full-text	③	J	A	O	①
	Executives' Personal Profile by Teikoku Databank	Biographical information with address of executives of more than 220,000companies in Japan	②	J	A	O	①
	Executives' Personal Profile by Tokyo Shoko Research	Biographical information with address of executives of more than 1,020,000 companies in Japan	②	J	A	O	①
	Extraordinary Administrative Research Council and the Administrative Reform Council Report	Reports and suggestions from Extraordinary Administrative Research Council and the Administrative Reform Council	③	J	A	O	①
	Financial Information by Teikoku Databank	Financial records of companies in Japan	②	J	A	O	①
	Financial Information by Tokyo Shoko Research	Financial records of companies in Japan	②	J	A	O	①
	Gendai Yogo no Kiso Chishiki(Basic Knowledge of Modern Terminology)	Electronic version of the 'Gendai Yogo no Kiso Chishiki(Basic Knowledge of Modern Terminology)' published by Jiyu Kokuminsha	③	J	A	O	①
	Historical WHO Foreign	Contains the profile of about 32,000 famous people in the world history	③	J	A	O	①
	Historical WHO Japan	Contains the profile of 60,000 famous people in Japanese history	③	J	A	O	①
	Hoken Mainichi Shimbun Database	Collection of articles from 'Hoken Mainichi Shimbun'	③	J	A	O	①

Table 2 Japanese Databases Accessible Overseas(2000:Distributors/Agents)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
FUJITSU LIMITED	Hot Springs in Japan	The information of about 1,400 hot springs and inns in Japan provided by Yama to Keikoku-sha	③	J	A	O	①
	IBJ-NIKKO Information System's Database/Japanese Notable Industries	Provides the information of the Japanese notable industries the IBJ-NIKKO information System possesses	②	J	A	O	①
	IBJ-NIKKO INFORMATION SYSTEMS' DATABASE-JAPAN ECONOMICS	Major macro-economic statistical data announced by government, administrative agencies or private organizations	②	J	A	O	①
	IBJ-NIKKO INFORMATION SYSTEMS' DATABASE-JAPAN INDUSTRIES	Monthly data of foreign trade and domestic trade. Data elements such as production, inventory, shipment, import, export. The data conveyed all 39 types of Japanese industry	②	J	A	O	①
	Index of the magazines in National Diet Library	Provides the information of the bibliography of magazines the National Diet Library possesses	③	J	A	O	①
	Industrial News	News releases from companies, government bodies, and related organizations	②	J	A	O	①
	Information Industry Hotline	Flash reports of 'The Daily Network News'	③	J	A	O	①
	Information of Bankrupt Companies by Teikoku Databank	Prompt reports of bankrupt companies	②	J	A	O	①
	INFORMATION OF BANKRUPT COMPANIES by Tokyo Shoko Research	Prompt reports of bankrupt companies	②	J	A	O	①
	JAFIC	Contains abstracts and references to articles on food industry	①	J	A	O	①
	JCATALOG	Provides catalog of serial publications, technical reports and conference related materials published in over 50 countries	①	J	A	O	①
	JICST(Time Span: from 1981 to present)	Contains references of the literature on science and technology from serial publications, technical reports etc. published in over 50 countries. Includes abstracts	①	J	A	O	①
	JICST75-80(Time Span: from 1975 to 1980)	Contains references of the literature on science and technology from serial publications, technical reports etc. published in over 50 countries. Includes abstracts	①	J	A	O	①
	JICST-E	Provides abstracts and references to articles on science and technology, medical science in Japan, described in English	①	E	A	O	①

Table 2 Japanese Databases Accessible Overseas(2000:Distributors/Agents)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
FUJITSU LIMITED	JMEDICINE	Provides abstracts and references to medical articles in Japan	①	J	A	O	①
	JQUICK	Contains references of the current literature on science and technology from 10,000 serial publications etc.	①	J	A	O	①
	JTB Hotel Information	Directory of domestic hotels and lodges	③	J	A	O	①
	Jutaku Shimpo Database	Collection of articles from ' Jutaku Shimpo'	③	J	A	O	①
	Kagaku Kogyo Nippo Database	Articles from 'Kagaku Kogyo Nippo' the leading newspaper for chemical industry	②	J	A	O	①
	Kensetsu Tsusin Shimbun Database	Collection of the articles of Kensetsu Tsushin Shimbun	③	J	A	O	①
	Korea News&Today	Online version of membership system Korean information paper	③	J	A	O	①
	Kyodo News Agency World Yearbook	Electronic version of World Yearbook published by Kyodo News Agency	③	J	A	O	①
	Law Database	Full-text of current laws held by the General Affairs Agency	②	J	A	O	①
	Library on Questionnaire to Consumers	Provides reports of Questionnaire to Consumers	②	J	A	O	①
	Listed and Over-the-counter companies by Toyo Keizai	Detailed information on the listed, over-the-counter, and foreign affiliated companies in Japan	②	J	A	O	①
	MAGAZINE	Provides the outlines of the articles in newspapers and magazines of economic, industrial and business fields	③	J	A	O	①
	MAINICHI ONLINE DATABASE	Collection of articles from 'MAINICHI DAILY NEWS'	③	E	A	O	①
	MAINICHI Shimbun DATABASE	Collection of articles from 'MAINICHI Shimbun'	③	J	A	O	①
	Mainichi Shimbun Database Personal Use Edition	Collection of articles in the last two years from 'Mainichi Shimbun Database'	③	J	A	O	①
	Market Search on Company Trends	Reference to the marketing research information on companies	②	J	A	O	①
	Market search on Consumer Trends	Reference to the marketing research information based on questionnaire to consumers	②	J	A	O	①
	Market Search on Products and Industries	Reference to the marketing research information on all industries and their products in Japan	②	J	A	O	①

Table 2 Japanese Databases Accessible Overseas(2000:Distributors/Agents)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
FUJITSU LIMITED	Market Search Reference Directory	Reference to the marketing research reports and articles	②	J	A	O	①
	Market Search Reference to trade papers and magazines	Provides references to trade papers and magazines concerning to the marketing research	②	J	A	O	①
	Monthly Outdoor Campsite Information	The information of about 1800 campsites in Japan provided by Yama to Keikoku-sha	③	J	A	O	①
	NATIONAL TOURIST INFORMATION DATABASE	Information on sight-seeing, such as depth of snow, events, availability of parking lots and hotels, and coupons of ski-ground, presented by cities, towns and villages in Japan	③	J	A	O	①
	NEW BUSINESS INDUSTRY REPORT	Research report of remarkable industries' trends and issues including description, structure, and profitability information	②	J	A	O	①
	Nihon Kogyo Shimbun Database	Collection of articles from 'Nihon Kogyo Shimbun'	③	J	A	O	①
	Nihon Nogyo Shimbun Database	Collection of articles from 'Nihon Nogyo Shimbun'	③	J	A	O	①
	Nihon Shoken Shimbun Database	Collection of articles from 'Nihon Shoken Shimbun'	③	J	A	O	①
	Nihon Shokuryo Shimbun Database	Articles from 'Shokuryo Shimbun' the leading newspaper for food industry	②	J	A	O	①
	Nikkan Kensetsu Kogyo Shimbun Database	Collection of articles from 'Nikkan Kensetsu Kogyo Shimbun'	③	J	A	O	①
	Nikkan Kogyo Shimbun Database	Collection of articles on new products and technology from 'Nikkan Kogyo Shimbun'	③	J	A	O	①
	NIKKAN SPORTS	Collection of articles from 'Nikkan Sports' newspaper	③	J	A	O	①
	Nikkan Sports Bulletin	The information of professional baseball games, entertainment, etc. provided by Nikkan Sports Data Supply	③	J	A	O	①
	Nikkan Sports Celebrities information	The collection of the profiles of athletes, artists, celebrities in various fields	③	J	A	O	①
	Nikkin	Collection of articles from 'Nikkin'	③	J	A	O	①
	PHARMA JAPAN	Collection of articles from 'PHARMA JAPAN' for overseas' medical and medicine business men. It includes full texts	②	J/E	A	O	①
	Pharmaceutical Company Information	Detailed company profiles of pharmaceutical manufacturers and wholesalers	②	J	A	O	①

Table 2 Japanese Databases Accessible Overseas(2000:Distributors/Agents)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
FUJITSU LIMITED	PRIZE	The introduction of 2,144 prizes in Japan and The winners' name of the prizes	③	J	A	O	①
	Q&A on Taxation and Corporation Law Database	Basic information on taxation in Q and A style with letters of Tax Law and Corporation Law	②	J	A	O	①
	Ryukyu Shimpo Database	Collection of articles from 'Ryukyu Shimpo'	③	J	A	O	①
	Sankei Shimbun Database	Articles from 'Sankei Shimbun'	②	J	A	O	①
	Sankei Shimbun Database Personal Use Edition	Collection of articles in the last two years from 'Sankei Shimbun Database'	③	J	A	O	①
	Senken Shimbun Database	Collection of articles from 'Senken Shimbun' the leading fasion newspaper in Japan	③	J	A	O	①
	Shimbun Akahata Database	Collection of articles from 'Shimbun Akahata'	③	J	A	O	①
	Sports Nippon Database	Collection of the articles of Sports Nippon	③	J	A	O	①
	Taxation Business Judgement Database (Summary)	Collection of summary on Taxation Business Judgment since 1948	②	J	A	O	①
	TEIKOKU DATABANK: JAPANESE COMPANIES	Business information of 210,000 Japanese companies	②	E	A	O	①
	Tekko Shimbun Database	Collection of articles from 'Tekko Shimbun'	③	J	A	O	①
	The Brain Map Guide to the Specialists	The profiles of the specialists in various fields according to JMA ACE Research Instituted Inc.'s research	③	J	A	O	①
	THE DAILY YOMIURI DATABASE	Collection of article from 'THE DAILY YOMIURI' published by the Yomiuri Shimbun. It includes full texts	③	E	A	O	①
	Title of Weekly and Monthly Magazine	Title information of 35 popular magazine	③	J	A	O	①
	TITLE SEARCH	Title information of articles from 1,000 magazines on technology	③	J	A	O	①
	TKC Law Information Database	Full-text of civil and administrative cases and related information	②	J	A	O	①
	Tokyo Shimbun Database	Collection of articles from 'Tokyo Shimbun'	③	J	A	O	①
	Trial for the Database of Newspapers	Provides the Samples of the database of the newspapers (Mainichi, Yomiuri, Sankei) for free	③	J	A	O	①

Table 2 Japanese Databases Accessible Overseas(2000:Distributors/Agents)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
FUJITSU LIMITED	Weekly Toyo Keizai Database	Collection of articles from 'Weekly Toyo Keizai'	③	J	A	O	①
	WHO	Contains the profile, books, essays interviews of celebrities who appear in newspapers, magazines and books	③	J	A	O	①
	Yomiuri Shimbun Database	Collection of articles from 'Yomiuri Shimbun' and 'Yomiuri Katei Shimbun'	③	J	A	O	①
	Yomiuri Shimbun Database Personal Use Edition	Collection of articles in the last two years from 'Yomiuri Shimbun Database'	③	J	A	O	①
GfK Marketing Services Asia Ltd.(GfK MS Asia)	ADR Market Trend Search	Retail panel data of home appliances and photo cameras in Asian countries	②	J/E	D	M	④⑤
GreenNet CO., LTD	G･Net	Japanese patent data stored	①	J	D	O	①
G-Search Limited(GSH)	ADMINISTRATIVE REFORM COMMITTEE'S BULLETIN	Prompt reports of Administrative Reform Council's discussion and announcement. The Council started at Dec.19, 1994	③	J	D	O	①
	AERA	Collection of articles from weekly magazine 'AERA'	③	J	D	O	①
	ASAHI ONLINE DATABASE	Collection of articles in English from 'Asahi Evening News' and English version of 'Asahi News Services'	③	E	D	O	①
	Asahi Shimbun Database	Contains the full text of 'Asahi Shimbun'	③	J	D	O	①
	BOOK/MONTHLY	Provides the information of the new books available in Japan	③	J	D	O	①
	BOOKPLUS	Contains the title, outline, author, publisher and price of the books published in Japan	③	J	D	O	①
	Bulletin of Administrative Reform Committee's Minutes	Provides the outline of bulletin of Administrative Reform Committee's Minutes	③	J	D	O	①
	Chugoku Shimbun Database	Collection of articles from 'Chugoku Shimbun'	③	J	D	O	①
	Chunich Shimbun Database	Collection of the articles of Chunich Shimbun	③	J	D	O	①
	Company Information by Teikoku Databank	Profiles of more than 1,100,000 companies in Japan	②	J	D	O	①
	Company Information by Tokyo Shoko Research	Profiles with performance information for current three years of more than 1,020,000 companies in Japan	②	J	D	O	①
	Company Information Retrieval Service	Cross-file retrieval system from several databases of newspapers and company profiles	②	J	D	O	①

Table 2 Japanese Databases Accessible Overseas(2000:Distributors/Agents)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
G-Search Limited(GSH)	Cross-File Retrieval of Company Information	Cross-file retrieval system from eight company databases	②	J	D	O	①
	Cross-File Retrieval of National Newspapers	Cross-File retrieval system from three database. Provides articles in the last two years	③	J	D	O	①
	Database of Directories	Bibliographic information and general description on directories published in Japan	②	J	D	O	①
	Decentralization Promotion Committee's Bulletin	Prompt reports of Decentralization Promotion Committee's discussion and announcement	③	J	D	O	①
	DIAMOND Personnel Directory of Companies	Personnel directory of major companies in Japan with personnel changes and corporate structure	②	J	D	O	①
	DNN INFORMATION INDUSTRY TODAY	Collection of articles from "DAILY NETWORK NEWS" and by-weekly "IBM WATCHING" published by Network News CO.,LTD.	③	J	D	O	①
	ECONOMIST	Electronic version of 'Economist' Journal, full-text	③	J	D	O	①
	Executives' Personal Profile by Teikoku Databank	Biographical information with address of executives of more than 220,000companies in Japan	②	J	D	O	①
	Executives' Personal Profile by Tokyo Shoko Research	Biographical information with address of executives of more than 1,020,000 companies in Japan	②	J	D	O	①
	Extraordinary Administrative Research Council and the Administrative Reform Council Report	Reports and suggestions from Extraordinary Administrative Research Council and the Administrative Reform Council	③	J	D	O	①
	Financial Information by Teikoku Databank	Financial records of companies in Japan	②	J	D	O	①
	Financial Information by Tokyo Shoko Research	Financial records of companies in Japan	②	J	D	O	①
	Gendai Yogo no Kiso Chishiki(Basic Knowledge of Modern Terminology)	Electronic version of the 'Gendai Yogo no Kiso Chishiki(Basic Knowledge of Modern Terminology)' published by Jiyu Kokuminsha	③	J	D	O	①
	Historical WHO Foreign	Contains the profile of about 32,000 famous people In the world history	③	J	D	O	①
	Historical WHO Japan	Contains the profile of 60,000 famous people In Japanese history	③	J	D	O	①
	Hoken Mainichi Shimbun Database	Collection of articles from 'Hoken Mainichi Shimbun'	③	J	D	O	①

Table 2 Japanese Databases Accessible Overseas(2000:Distributors/Agents)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
G-Search Limited(GSH)	Hot Springs in Japan	The information of about 1,400 hot springs and inns in Japan provided by Yama to Keikoku-sha	③	J	D	O	①
	IBJ-NIKKO Information System's Database/Japanese Notable Industries	Provides the information of the Japanese notable industries the IBJ-NIKKO information System possesses	②	J	D	O	①
	IBJ-NIKKO INFORMATION SYSTEMS' DATABASE-JAPAN ECONOMICS	Major macro-economic statistical data announced by government, administrative agencies or private organizations	②	J	D	O	①
	IBJ-NIKKO INFORMATION SYSTEMS' DATABASE-JAPAN INDUSTRIES	Monthly data of foreign trade and domestic trade. Data elements such as production, inventory, shipment, import, export. The data conveyed all 39 types of Japanese industry	②	J	D	O	①
	Index of the magazines in National Diet Library	Provides the information of the bibliography of magazines the National Diet Library possesses	③	J	D	O	①
	Industrial News	News releases from companies, government bodies, and related organizations	②	J	D	O	①
	Information Industry Hotline	Flash reports of 'The Daily Network News'	③	J	D	O	①
	Information of Bankrupt Companies by Teikoku Databank	Prompt reports of bankrupt companies	②	J	D	O	①
	INFORMATION OF BANKRUPT COMPANIES BY Tokyo Shoko Research	Prompt reports of bankrupt companies	②	J	D	O	①
	JAFIC	Contains abstracts and references to articles on food industry	①	J	D	O	①
	JCATALOG	Provides catalog of serial publications, technical reports and conference related materials published in over 50 countries	①	J	D	O	①
	JICST(Time Span: from 1981 to present)	Contains references of the literature on science and technology from serial publications, technical reports etc. published in over 50 countries. Includes abstracts	①	J	D	O	①
	JICST75-80(Time Span: from 1975 to 1980)	Contains references of the literature on science and technology from serial publications, technical reports etc. published in over 50 countries. Includes abstracts	①	J	D	O	①
	JICST-E	Provides abstracts and references to articles on science and technology, medical science in Japan, described in English	①	E	D	O	①

Table 2 Japanese Databases Accessible Overseas(2000:Distributors/Agents)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
G-Search Limited(GSH)	JMEDICINE	Provides abstracts and references to medical articles in Japan	①	J	D	O	①
	JQUICK	Contains references of the current literature on science and technology from 10,000 serial publications etc.	①	J	D	O	①
	JTB Hotel Information	Directory of domestic hotels and lodges	③	J	D	O	①
	Jutaku Shimpo Database	Collection of articles from ' Jutaku Shimpo'	③	J	D	O	①
	Kagaku Kogyo Nippo Database	Articles from 'Kagaku Kogyo Nippo' the leading newspaper for chemical industry	②	J	D	O	①
	Kensetsu Tsusin Shimbun Database	Collection of the articles of Kensetsu Tsushin Shimbun	③	J	D	O	①
	Korea News&Today	Online version of membership system Korean information paper	③	J	D	O	①
	Kyodo News Agency World Yearbook	Electronic version of World Yearbook published by Kyodo News Agency	③	J	D	O	①
	Law Database	Full-text of current laws held by the General Affairs Agency	②	J	D	O	①
	Library on Questionnaire to Consumers	Provides reports of Questionnaire to Consumers	②	J	D	O	①
	Listed and Over-the-counter companies by Toyo Keizai	Detailed information on the listed, over-the-counter, and foreign affiliated companies in Japan	②	J	D	O	①
	MAGAZINE	Provides the outlines of the articles in newspapers and magazines of economic, industrial and business fields	③	J	D	O	①
	MAINICHI ONLINE DATABASE	Collection of articles from 'MAINICHI DAILY NEWS'	③	E	D	O	①
	MAINICHI Shimbun DATABASE	Collection of articles from 'MAINICHI Shimbun'	③	J	D	O	①
	Mainichi Shimbun Database Personal Use Edition	Collection of articles in the last two years from 'Mainichi Shimbun Database'	③	J	D	O	①
	Market Search on Company Trends	Reference to the marketing research information on companies	②	J	D	O	①
	Market search on Consumer Trends	Reference to the marketing research information based on questionnaire to consumers	②	J	D	O	①
	Market Search on Products and Industries	Reference to the marketing research information on all industries and their products in Japan	②	J	D	O	①

Table 2 Japanese Databases Accessible Overseas(2000:Distributors/Agents)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
G-Search Limited(GSH)	Market Search Reference Directory	Reference to the marketing research reports and articles	②	J	D	O	①
	Market Search Reference to trade papers and magazines	Provides references to trade papers and magazines concerning to the marketing research	②	J	D	O	①
	Monthly Outdoor Campsite Information	The information of about 1800 campsites in Japan provided by Yama to Keikoku-sha	③	J	D	O	①
	NATIONAL TOURIST INFORMATION DATABASE	Information on sight-seeing, such as depth of snow, events, availability of parking lots and hotels, and coupons of ski-ground, presented by cities, towns and villages in Japan	③	J	D	O	①
	NEW BUSINESS INDUSTRY REPORT	Research report of remarkable industries' trends and issues including description, structure, and profitability information	②	J	D	O	①
	Nihon Kogyo Shimbun Database	Collection of articles from 'Nihon Kogyo Shimbun'	③	J	D	O	①
	Nihon Nogyo Shimbun Database	Collection of articles from 'Nihon Nogyo Shimbun'	③	J	D	O	①
	Nihon Shoken Shimbun Database	Collection of articles from 'Nihon Shoken Shimbun'	③	J	D	O	①
	Nihon Shokuryo Shimbun Database	Articles from 'Shokuryo Shimbun' the leading newspaper for food industry	②	J	D	O	①
	Nikkan Kensetsu Kogyo Shimbun Database	Collection of articles from 'Nikkan Kensetsu Kogyo Shimbun'	③	J	D	O	①
	Nikkan Kogyo Shimbun Database	Collection of articles on new products and technology from 'Nikkan Kogyo Shimbun'	③	J	D	O	①
	NIKKAN SPORTS	Collection of articles from 'Nikkan Sports' newspaper	③	J	D	O	①
	Nikkan Sports Bulletin	The information of professional baseball games, entertainment, etc. provided by Nikkan Sports Data Supply	③	J	D	O	①
	Nikkan Sports Celebrities information	The collection of the profiles of athletes, artists, celebrities in various fields	③	J	D	O	①
	Nikkin	Collection of articles from 'Nikkin'	③	J	D	O	①
	PHARMA JAPAN	Collection of articles from 'PHARMA JAPAN' for overseas' medical and medicine business men. It includes full texts	②	J/E	D	O	①
	Pharmaceutical Company Information	Detailed company profiles of pharmaceutical manufacturers and wholesalers	②	J	D	O	①

Table 2 Japanese Databases Accessible Overseas(2000:Distributors/Agents)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
G-Search Limited(GSH)	PRIZE	The introduction of 2,144 prizes in Japan and The winners' name of the prizes	③	J	D	O	①
	Q&A on Taxation and Corporation Law Database	Basic information on taxation in Q and A style with letters of Tax Law and Corporation Law	②	J	D	O	①
	Ryukyu Shimpo Database	Collection of articles from 'Ryukyu Shimpo'	③	J	D	O	①
	Sankei Shimbun Database	Articles from 'Sankei Shimbun'	②	J	D	O	①
	Sankei Shimbun Database Personal Use Edition	Collection of articles in the last two years from 'Sankei Shimbun Database'	③	J	D	O	①
	Senken Shimbun Database	Collection of articles from 'Senken Shimbun' the leading fasion newspaper in Japan	③	J	D	O	①
	Shimbun Akahata Database	Collection of articles from 'Shimbun Akahata'	③	J	D	O	①
	Sports Nippon Database	Collection of the articles of Sports Nippon	③	J	D	O	①
	Taxation Business Judgement Database (Summary)	Collection of summary on Taxation Business Judgment since 1948	②	J	D	O	①
	TEIKOKU DATABANK: JAPANESE COMPANIES	Business information of 210,000 Japanese companies	②	E	D	O	①
	Tekko Shimbun Database	Collection of articles from 'Tekko Shimbun'	③	J	D	O	①
	The Brain Map Guide to the Specialists	The profiles of the specialists in various fields according to JMA ACE Research Instituted Inc.'s research	③	J	D	O	①
	THE DAILY YOMIURI DATABASE	Collection of article from 'THE DAILY YOMIURI' published by the Yomiuri Shimbun. It includes full texts	③	E	D	O	①
	Title of Weekly and Monthly Magazine	Title information of 35 popular magazine	③	J	D	O	①
	TITLE SEARCH	Title information of articles from 1,000 magazines on technology	③	J	D	O	①
	TKC Law Information Database	Full-text of civil and administrative cases and related information	②	J	D	O	①
	Tokyo Shimbun Database	Collection of articles from 'Tokyo Shimbun'	③	J	D	O	①
	Trial for the Database of Newspapers	Provides the Samples of the database of the newspapers (Mainichi, Yomiuri, Sankei) for free	③	J	D	O	①
	Weekly Toyo Keizai Database	Collection of articles from 'Weekly Toyo Keizai'	③	J	D	O	①

Table 2 Japanese Databases Accessible Overseas(2000:Distributors/Agents)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
G-Search Limited(GSH)	WHO	Contains the profile, books, essays interviews of celebrities who appear in newspapers, magazines and books	③	J	D	O	①
	Yomiuri Shimbun Database	Collection of articles from 'Yomiuri Shimbun' and 'Yomiuri Katei Shimbun'	③	J	D	O	①
	Yomiuri Shimbun Database Personal Use Edition	Collection of articles in the last two years from 'Yomiuri Shimbun Database'	③	J	D	O	①
Information Services International-Dentsu, Ltd.(ISID)	JSD	Real-time stock price information on Tokyo and Osaka Stock Exchanges, provided by Jiji Press, Ltd	②	J	D	O	
Japan Association for International Chemical Information(JAICI)	QCLDB	Bibliographic database of ab initio quantum chemistry	①	E	D	M	①
Japan Patent Information Organization(Japio)	INPADOC	Published bibliographic data on patents and utility models of 62 countries and 5 international organizations from 1969. (Remark : Each accumulation period depends on countries and organizations.)	①	E/O	D	I/O	②③④
Japan Science and Technology Corporation(JST)	JAFIC	Bibliographic Database on Food Industry	①	J	D	I/O	①
	JAPICDOC	Bibliographic Database on effectiveness and safety of Drugs	①	J	D	I/O	①
	NK-MEDIA	Information on new products and new technology introduced by Nikkan Kogyo Shimbun	③	J	D	I/O	①
	OSAKA-UE	Bibliographic Database on Civil Engineering in Osaka	①	J	D	I/O	①
National Institute of Informatics(NII)	bibliographia germanistica japonica	Bibliographic information on books and serials held by Japanische Gesellschaft für Germanistik	①	J/O	D	I/O	①
	Bibliography of Central Asian Studies in Japan	Index information of academic documents in Japan relating of the Central Asian region	①	J/E/O	D	I/O	①
	Bibliography of Islamic and Middle Eastern Studies in Japan	Index information of academic documents in Japan relating of the Middle East and Islamic region	①	J/E/O	D	I/O	①
	Bibliography of Japanese Sociology	Bibliographic information on books and periodicals related to sociology that published by Japanese scholars or published in Japan	①	J/E/O	D	I/O	①
	Calendar of Academic Meetings, compiled by Japan Federation of Engineering Societies	Calendar of meetings and conferences involving member societies of the Japan Federation of Engineering Societies	①	J/E/O	D	I/O	①

Table 2 Japanese Databases Accessible Overseas(2000:Distributors/Agents)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
National Institute of Informatics(NII)	Catalog of Collection related to Curriculum Development and Instruction of Japanese Language Teaching, held by Naruto University of Education	Catalog information for books, periodicals and other data in the "Collection of Junya NOJI" and "Collection of Hama OHMURA" held by the Naruto University of Education Library	①	J	D	I/O	①
	Chemical Education Database	Citations (with abstracts) of articles appearing in "Chemistry and Education" Journal of the Chemical Society of Japan	①	J	D	I/O	①
	Chemical Sensor Database	Information on preparation and property of chemical sensors with bibliographic citations	①	E	D	I/O	①
	Database of Dossier related to Japan in Russian Diplomatic Archives	Information on the Japan related dossiers in the holdings of the Russian Ministry of Foreign Affairs	①	O	D	I/O	①
	Database of Geographical Studies in Japan	Bibliographic information on books and periodicals on geography and closely related fields that published in Japan	①	J	D	I/O	①
	Database of Japanese Traditional Music by Modern Composers	Bibliographic information on the contemporary music which has been composed mostly in the post-World War II years for Japan's traditional musical instruments	③	J	D	I/O	①
	Database of Medical Conference Proceedings in Japan	Catalog of conference proceedings in Japanese languages related to medical science and pharmacy, held by International Medical Information Center	①	J	D	I/O	①
	Database on Bibliography for Scientific Studies on Cultural Properties	Bibliographic information on articles on scientific analyses and measurements using cultural properties in Japan	①	J	D	I/O	①
	Directory of Special Collections of National University Libraries	Directory of special collections of humanities and social sciences held by national university libraries in Japan	①	J/E/O	D	I/O	①
	Hokkaido University Northern Studies Collection Database	Bibliographic information on the Northern Studies Collection of Japan, collected and held by the Northern Studies Collection of the Hokkaido University Library	①	J	D	I/O	①
	Index for General Information of Home Economics Research	Bibliographic citations of scientific papers in the field of home economics	①	J	D	I/O	①
	Index to Papers of Architectural Institute of Japan	Index of papers featured in journals published by the Architectural Institute of Japan	①	J	D	I/O	①
	Inventory of Japanese Historical Documents	Documents covered by historiographical materials, some of which take the form of "Eisha-bon" (full-size tracings made with brush and India ink on thin Japanese paper)	③	J	D	I/O	①

Table 2 Japanese Databases Accessible Overseas(2000:Distributors/Agents)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
National Institute of Informatics(NII)	Japanese Periodicals Index	Bibliographic citations of scientific papers in all fields in Japan	①	J	D	I/O	①
	Japanese Slavic and East European Studies Database	Information on literature relating to Slavic area published in Japan	①	J/E/O	D	I/O	①
	JPMARC	National bibliography on books published in Japan	①②③	J	D	I/O	①
	National Diet Library Catalog of Foreign Books	Foreign Books catalog held by the National Diet Library	①②③	E	D	I/O	①
	RAMBIOS	Bibliographic citation of review articles in the field of molecular biosciences	①	E	D	I/O	①
	Register of Private Grants-in-Aid	Research themes funded by private grant foundations	①	J	D	I/O	①
	Researcher directory of Asian Historical Studies in Japan	Profile of researchers engaged in research on Asian history in Japan and information on papers published	①	J/E/O	D	I/O	①
	Researcher directory of Buddhist and Indic Studies in Japan	Profile of researchers engaged in research on Asian history in Japan and information on papers published	①	J/E/O	D	I/O	①
	Summary of Materials of Ishin History	Fulltext of the summary of materials of Ishin (Meiji Restoration)	③	J	D	I/O	①
NEC Corporation(NEC)	BIGLOBE DATABASE	Information on companies, economy, technology and international trade	①②③	J	D	I	①
NIFTY Corporation(@nifty)	INFOCUE	Reference service in English concerning a wide range of information in the field news,business,science and medicine	②③	E	D	O	①
	MULTI MEDEIA DB	Database service mainly consisted of business information	②③	J	D	O	①
	NI MEDIA SEEK	Reference service for a wide of information concerning books and living	②③	J	D	O	①
NIHON KEIZAI SHIMBUN, INC.(NIKKEI)	Asian Corporate Profile	Description of companies in Asia including 10,000 Chinese manufacturers, 1,800 Korean listed companies, 600 Hong Kong listed companies, and 1,000 Japanese-owned companies in Asia	②	E	D	O/M	②③④
	DRI DATA	Major economic statistics and indices for United States	②	E	D	O	②③④
	Data on Borrowing by Financial Institutions	Data on borrowing by the financial institutions provided by the Industrial Bank of Japan	②	J/E	D	O/M	②③④
	IFS Data	Financial statistics and price indices with GNP for IMF member countries	②	E	D	O	②③④

Table 2 Japanese Databases Accessible Overseas(2000:Distributors/Agents)

Company	Database	Description	Subject	Language	Status	Medium	Main Countries
NIHON KEIZAI SHIMBUN, INC.(NIKKEI)	Input-Output Tables	Expanded input-output tables originally developed by NIKKEI, basic government table and its supplements, and connected industry input-output tables are included	②	J/E	D	O	②③④
	OECD Economic file	Major economic indices including GNP for IMF member countries	②	E	D	O	②③④
	OECD National Income Statistics File	National expenditure and its itemized break-down for 20 industrial nations	②	E	D	O	②③④
	World Bank External Debt Statistics	Balance of debts and other economic indices of 105 developing countries	②	E	D	O	②③④
NTT BUSINESS INFORMATION SERVICE INC.	Town Page Database	Search for area or industry type from 11million nationwide corporate information listings in 1,700 categories (The Town Page Database is an electronic version of the NTT Town Pages) Details include company name, postcode, address, industry classification and telephone number	③	J	D	M/C	①
Research Institute of International Trade and Industry(RITI)	Input-Output Table	Input-output table of Japanese industries, provided by the Ministry of International Trade and Industry	②	O: Numeric	D	M	②
Technomics, Inc.	Actfund	Information on antibiotic substances, Natural Products	①	J/E	D	M	②③

Appendix

Table 3 Japanese Databases Being Planned Overseas (2000)

Subject
①: Science and Technology
②: Economics, Business and Finance
③: General/Others

Language
J: Japanese
E: English
O: Others

Vendor Status
P: Producer
D: Distributor
A: Agent
T: Telecommunications Center

Medium
I: Internet
O: Online
M: MT, FD
C: CD-ROM, MO, DVD, etc.

Providing
①: Worldwide
②: North America
③: Europe
④: Asia and Australia
⑤: Others

* Please look at the home page of DPC as for the latest directory. (URL:http://www.dpc.or.jp)

Company	Database	Description	Subject	Language	Medium
IBJ-NIKKO INFORMATION SYSTEMS, LTD. (INIS)	I.N.Bond Database	Information on domestic public issues by Japanese resident corporations	②	E	Undetermined
National Diet Library (NDL)	NDL CD-ROM LINE Name Authorities	Name Authorities retrieval database by CD-ROM	③	J/E	C
National Institute of Informatics(NII)	Database of American Studies in Japan	Bibliographic information on books and periodicals related to American Studies in Japan	①	J/E	I/O
Nippon Statistics Center., Ltd.(NSC)	Data by Cities & Towns	3,342 District-Unit (900datas)	②	J/E	M/C
	Data by Smallest Area	177,092 District-Unit (200datas)	②	J/E	M/C
Osaka City Foundation for Urban Technology	Osaka and Its Technology	Outstanding reports on various fields of engineering written by staff engineering officers of the city	①	E	I
The Energy Conservation Center, Japan (ECCJ)	Energy Conservation Database	English version of Energy Conservation Database in Japanese, Energy conservation technology data and related energy and environment data	①	J/E	I
The Energy Data and Modelling Center, The Institute of Energy Economics, Japan(EDMC)	EDMC Energy Databank	Various Energy Data and its related Data in Japan and the World	③	E	I
TMC Co., Ltd.	Medie	Database for Medical Devices	③	J/E	I/O/M/C
TOYO KEIZAI INC.	Fundamental(Yuho)	Final edition of financial report of all listed and OTC companies	②	J/E	I/M/C

Appendix

Table 4 Address of Overseas Service Points (2000: Producers/Distributors)

Company	Contacts	Address	Telephone	Facsimile	Homepage	Status
Asahi Shimbun Publishing Company(ASAHI SHIMBUN)	Electronic Media & Broadcasting Division, Asahi Shimbun Company	5-3-2 Tsukiji, Chuo-ku, Tokyo 104-8011, Japan	+81-3-5541-8693	+81-3-5541-8694	http://www.asahi.com	Headquarters
	C.W.N New York Office	445 West 23rd Street Suite 10-B New York N.Y. 10011, U.S.A.	+212-645-2464	+212-645-0979		Partner
	New York Times Syndication Sales	3 Rue Scribe Paris 75009, France	+33-1-47-42-1711	+33-1-47-42-8044		Partner
Association of Agriculture and Forestry Statistics	Association of Agriculture and Forestry Statistics	Meguro-Sumiya bldg. 3-9-13, Shimo-Meguro, Meguro-ku, Tokyo 153-0064, Japan	+81-3-3492-2989	+81-3-3492-2545	http://www.aafs.or.jp	Headquarters
	Maruzen Co., LTD.	2-3-10, Nihonbashi, Chuo-ku, Tokyo 103-8245, Japan	+81-3-3273-3234	+81-3-3271-6076		Agent
AXESS INTERNATIONAL NETWORK INC. (AXESS)	AXESS INTERNATIONAL NETWORK INC.	Seafort Square Center Bldg., 2-3-12 Higashi Shinagawa, Shinagawa-ku, Tokyo 140-8619, Japan	+81-3-5460-7035	+81-3-5460-7009	http://www.axess.co.jp	Headquarters
Brandy International Incorporated(Bii)	Brandy International Incorporated	11F, Toyo Ekimae Bldg., 2-2-20 Toyo, Koto-ku, Tokyo 135-0016, Japan	+81-3-5683-7210	+81-3-5683-7213	http://www.brandy.co.jp/	Headquarters
Database Promotion Center, Japan (DPC)	Database Promotion Center, Japan	5th Floor, Shinbashi-Towa Bldg., 2-13-8 Shinbashi, Minato-ku, Tokyo 105-0004 Japan	+81-3-3508-2430	+81-3-3508-2440	http://www.dpc.or.jp	Headquarters
DENTSU INC.	Electronic Library Division, DENTSU INC.	1-11-10 Tsukiji, Chuo-ku, Tokyo 104-8426, Japan	+81-3-5551-7116	+81-3-5551-2345	http://www.dentsu.co.jp/	Headquarters
Dun & Bradstreet Japan Ltd.(D&B)	Dun & Bradstreet Japan Ltd.(D&B)	5F Aobadai Hills , 4-7-7 Aobadai, Meguro-ku, Tokyo 153-0042, Japan	+81-3-5464-2811	+81-3-5465-2861	http://www.dnbjpn.co.jp/	Branch
	Dun & Bradstreet Asia-pacific,Canada, Latin America	One Diamond Hill Road Murray Hill, NJ07974-0027 U.S.A.	+1-908-665-5000	+1-908-665-5135	http://www.dnb.com/	Branch
	Dun & Bradstreet Limited	Holmers Farm Way, High Wycombe, Bucks HP12 4UL England	+44-1494-42-2000	+44-1494-42-2260	http://www.uk.dnb.com/	Branch
	Dun & Bradstreet (Australia)Pty. Ltd.	4th Floor, 479st. Kilda Road, Melbourne, Vic.3004 Australia	+61-3-9828-3599	+61-3-9828-3570	http://www.dnb.com.au/	Branch

Table 4 Address of Overseas Service Points(2000:Producers/Distributors)

Company	Contacts	Address	Telephone	Facsimile	Homepage	Status
EDUCA Inc. (EDUCA)	EDUCA Inc.	4-4-10, Minami-Aoyama, Minato-ku , Tokyo 107-0062, Japan	+81-3-5474-3541	+81-3-5474-6944		Headquarters
Electronic Devices Information Service Co., Ltd. (ELISNET)	Electronic Devices Information Service Co., Ltd.	Hirakawa-cho KS Bldg., 5F, 2-4-14 Hirakawa-cho, Chiyoda-ku, Tokyo 102-0093, Japan	+81-3-5275-3770	+81-3-5275-3840	http://www.elisnet.or.jp	Headquarters
ELECTRONIC LIBRARY Inc. (EL)	ELECTRONIC LIBRARY Inc. (EL)	8-11-13 Nishi-Gotanda, Shinagawa-ku, Tokyo 141-0031, Japan	+81-3-3779-1211	+81-3-3779-1227	http://www.elnet.co.jp	Headquarters
ELECTRONIC LIBRARY Inc. (EL)	NTT WORLDWIDE TELE COMMUNICATIONS CORPORATION	Kawa Nishi-shinbashi building-B tower, 2-14-1 Nishi-shinbashi, Minato-ku, Tokyo 105-0003, Japan	+81-3-5551-7116	+81-3-5551-2345		Agent
	NI+C International Co.	IBM Kawasaki Bldg., 1-14 Nisshin-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa 210-0024, Japan	+81-3-3539-2700	+81-3-3539-2891		Agent
Financial Information Services Japan K.K. (FIS Japan)	Financial Information Services Japan K.K.	Shin Aoyama Bldg., West21F, 1-1-1, Minami-Aoyama, Minato-ku, Tokyo 107-0062, Japan	+81-3-5770-5321	+81-3-5770-5328	http://www.fisonline.com	Headquarters
FUJITSU LIMITED	FUJITSU LIMITED	Fujitsu Ebisu Bldg.,1-18-18 Ebisu, Sibuya-ku, Tokyo 150-8450, Japan	+81-3-5423-6350	+81-3-5449-7240	http://www.fujitsu.co.jp	Headquarters
GfK Marketing Services Asia Ltd.(Gfk MS Asia)	GfK Marketing Services Asia Ltd.(Gfk MS Asia)	Nakanosakaue Sunbright Twin 15F, 2-46-1 Honcho, Nakano-ku, Tokyo 164-0012, Japan	+81-3-5350-4765	+81-3-5350-4775		Headquarters
	GfK Marketing Service Ltd.	Room 2314, Park-in-Commercial Center, 56 Dundas Street, Yaumatei, Kowloon, HongKong	+852-2359-3333	+852-2332-5841		Branch; Headquarters
GfK Marketing Services Japan Ltd.	GfK Marketing Services Japan Ltd.	Nakanosakaue Sunbright Twin 15F, 2-46-1 Honcho, Nakano-ku, Tokyo 164-0012, Japan	+81-3-5350-4621	+81-3-5350-4647	http://www.gfkjpn.co.jp	Headquarters
GreenNet CO.,LTD.	GreenNet CO.,LTD.	#1103, 2-7-16, Toranomon, Minato-ku, Tokyo 105-0001, Japan	+81-3-3539-6202	+81-3-3502-0977		Headquarters
	GREEN NET KOREA CO., LTD.	#406, Dae Kyo B/D 56-4,3GA Wonhyo-ro Yong San-gu Seoul, KOREA.	+82-2-717-1894	+82-2-706-5687		Branch
G-Search Limited(GSH)	G-Search Limited	LOOP-X Bldg., 9F 3-9-15 Kaigan, Minato-ku, Tokyo 108-0022, Japan	+81-3-5442-4381	+81-3-5442-4391	http://www.g-search.or.jp/	Headquarters

Table 4 Address of Overseas Service Points(2000:Producers/Distributors)

Company	Contacts	Address	Telephone	Facsimile	Homepage	Status
IBJ-NIKKO INFORMATION SYSTEMS, LTD. (INIS)	IBJ-NIKKO INFORMATION SYSTEMS, LTD.	3-7-1 Kanda-Nishiki-cho, Chiyoda-ku, Tokyo 101-0054, Japan	+81-3-5281-1101	+81-3-5281-0707	http://www.indb.co.jp/	Headquarters
	Datastream International LTD.	Monmouth House, 58-64 City Road, London EC1Y2AL, U.K.	+44-171-250-3000			Partner
	Factset Research Systems Greenwitch, CT	One Greenwitch Plaza Greenwitch, Connecticut, USA 06830	+1-203-863-1500	+1-203-863-1501	http://factset.com	Partner
Information Services International-Dentsu, Ltd. (ISID)	Information Services International Dentsu, Ltd.	4-11-10 Nakano, Nakano-ku, Tokyo 164-8520, Japan	+81-3-3228-6111	+81-3-3319-6989	http://www.isid.co.jp	Headquarters
	ISI-Dentsu of America, Inc.	1114 Avenue of the Americas, New York, NY 10036, U.S.A.	+1-212-789-2300	+1-212-789-2333		Branch
	ISI-Dentsu of Asia, Ltd.	Suite 1101, Central Plaza, 18 Harbour Road, Wanchai, Hong Kong	+852-2829-0829	+852-2802-8477		Branch
Information Services International-Dentsu, Ltd. (ISID)	ISI-Dentsu of Europe, Ltd.	1st Floor, Aquila House, 33-34 Soho Square, London, W1V 5DG, U.K.	+44-171-287-4207	+44-171-287-4206		Branch
	ISI-Dentsu Singapore, Pte. Ltd.	10 Science Park Road, #03-13, The Alpha, Singapore Science Park II, Singapore, 117684	+65-872-3688	+65-872-5788		Branch
Japan Association for International Chemical Information (JAICI)	Japan Association for International Chemical Information	Nakai Bldg., 6-25-4 Hon-komagome, Bunkyo-ku, Tokyo 113-0021, Japan	+81-3-5978-3622	+81-3-5978-3600	http://www.jaici.or.jp/	Headquarters
	Kay Pool	9520 Linden Avenue, Bethesda, MD 20814, U.S.A.	+1-301-493-6595	+1-301-897-3487		Agent
	KOREA INFORMATION SERVICES FOUNDATION	#450-1, Gayang Bldg., Gayang Dong, Gangsao-ku, Seoul, 157-200 Korea	+82-2-3668-1493	+82-2-3661-1586		Agent
Japan Construction Information Center(JACIC)	Japan Construction Information Center	Akasaka Seventh Avenue Bldg.,7-10-20 Akasaka, Minato-ku, Tokyo 107-8416, Japan	+81-3-3505-2981	+81-3-3505-2966	http://www.jacic.or.jp	Headquarters
Japan External Trade Organization (JETRO)	Japan External Trade Organization	2-2-5 Toranomon, Minato-ku, Tokyo 105-8466, Japan	+81-3-3582-5511	+81-3-3587-0219	http://www.jetro.go.jp	Headquarters
Japan Packaging Machinery Manufacturers Association(JPMA)	Japan Packaging Machinery Manufacturers Association	7thF, Kimura Bldg., 5-5-5 Asakusabashi, Taito-ku, Tokyo 111-0053, Japan	+81-3-3865-2815	+81-3-3865-2850	http://www.jpmma.or.jp/	Headquarters

Table 4 Address of Overseas Service Points(2000:Producers/Distributors)

Company	Contacts	Address	Telephone	Facsimile	Homepage	Status
JAPAN PATENT DATA SERVICE, CO.(JPDS)	HANLIM IPS CO,.LTD	Suda Bldg., 1-17-8 Nishi-Shinbashi, Minato-ku, Tokyo 105-0003, Japan	+81-3-3580-8021	+81-3-5512-7810	http://www.jpds.co.jp	Agent
Japan Patent Information Organization (Japio)	Japan Patent Information Organization (Japio)	Sato-Dia Bldg.4-1-7 Toyo, Koto-ku, Tokyo 135-0016, Japan	+81-3-5690-5555	+81-3-5690-5566	http://www.japio.or.jp	Headquarters
	European Paten Office (EPO)	Rennweg 12 Postfach 90 A - 1031 Vienna	+43-1-521-26-0	+43-1-521-26-5491		Partner
	The Dialog Corporation	11000 Regency Parkway Suite 10, Cary, NC 27511 U.S.A.	+1-919-462-8600	+1-919-468-9890		Partner
	QUESTEL/Orbit Inc.	4, rue des Colonnes 75082 Paris Cedex 02 France	+33-1-55045239	+33-1-55045267		Partner
	STN INTERNATIONAL, c/o FIZ Karlsruhe	D-76344 Eggenstein-Leopoldshafen, Federal Republic of Germany	+49-7247-808403	+49-7247-808114		Partner
Japan Science and Technology Corporation (JST)	Japan Science & Technology Corporation (JST) Online Division	5-3, Yonbancho, Chiyoda-ku, Tokyo 102-0081, Japan	+81-3-5214-8414	+81-3-5214-8410	http://pr.jst.go.jp/	Headquarters
	CEDOCAR	00460 Armees, France				Partner
	Data Communications Corp. of Korea (DACOM) The Online Service Division	DACOM Bldg., 706-1, Yoksan-Dong Kangnam-ku, Seoul, 135-610, KOREA	+82-2-2220-7637	+82-2-2220-0325		Agent(JOIS)
	JST Malaysia Office	Suite 20.02 Wisma Goldhill, No.67, Jalan Raja Chulan, 50200 Kuala Lumpur, Malaysia	+60-3-202-4800	+60-3-202-4900	http://www.jstmy.com.my/jstmy	Branch
	JST Paris Office	Batiment Mercure, 31 Quai de Grenelle 75738 Paris, Cedex 15 France	+33-1-5395-3880	+33-1-5395-3881		Branch
	JST Washington Office	200 L Street, N.W. Suite 508 Washington, D.C. 20036, U.S.A	+1-202-872-4707	+1-202-872-4053		Branch
	The Diolog Corp.	The Communications Bldg.48 Leicester Square, London, WC2H 7DB, United Kingdom	+44-171-930-6900	+44-171-930-6006		Partner
	VTT Information Service	Vuorimiehentie 5, Espoo P.O.Box 2000, Fin-02044 FINLAND	+358-0-456-4386	+358-0-456-4374		Agent
Japan Small and Medium Enterprise Corporation(JASMEC)	Japan Small and Medium Enterprise Corporation	37th Mori Bldg., 3-5-1 Toranomon, Minato-ku, Tokyo 105-8453 Japan	+81-3-5470-1569	+81-3-5470-1527	http://www.jasmec.go.jp	Headquarters

Table 4 Address of Overseas Service Points(2000:Producers/Distributors)

Company	Contacts	Address	Telephone	Facsimile	Homepage	Status
Japan Small and Medium Enterprise Corporation(JASMEC)	Japan Small and Medium Enterprise Corporation New York Representative Office	1221 Avenue of The Americas, 42th Floor New York, N.Y. 10020-1079. U.S.A.	+1-212-997-6469			Branch
	Japan Small and Medium Enterprise Corporation Bangkok Representative Office	Jetro Bldg., 159 Rajadamri Road, Bangkok 10330 Thailand	+66-2-253-6441	+66-2-253-2020		Branch
	Japan Small and Medium Enterprise Corporation Shanghai Desk	21st Floor, Shanghai International Trading Center, No.2200, Yan'anxi road, Shanghai	+86-21-62700489	+86-21-62700499		Branch
KAHOKU SHIMPO PUBLISHING CO.	KAHOKU SHIMPO PUBLISHING CO.	1-2-28 Itsutsubashi, Aoba-ku, Sendai 980-8660, Japan	+81-22-211-1166	+81-22-211-1156	http://www.kahoku.co.jp/	Headquarters
K.K. Kyodo News	K.K. Kyodo News	16th Kowa Bldg., North Wing, 1-9-20, Akasaka, Minato-ku, Tokyo 107-8517, Japan	+81-3-5572-6095	+81-3-5572-6097	http://www.kyodo.co.jp/	Headquarters
	Dow Jones Markets	Harbor side Financial Center 600 Plaza Two Jersey City, NJ07311 U.S.A	+201-938-5563	+201-938-5555		Partner
Market Information Center for Perishable Food(MICPF)	Market Information Center for Perishable Food	NTTDATA Omori Sanno Bldg., 1-3-5, Sanno, Ota-ku, Tokyo 143-0023, Japan	+81-3-3778-6478	+81-3-3778-6479	http://www2s.biglobe.ne.jp/~fains/	Headquarters
Marketing Intelligence Corporation (MIC)	Marketing Intelligence Corporation	1-4-1 Honcho, Higashikurume-shi, Tokyo 203-8601, Japan	+81-424-76-5164	+81-424-76-5198	http://www.mictokyo.co.jp/mic/	Marketing Research Business Division
	Marketing Intelligence Corporation Shanghai Office	Shanghai International Trade Center 2200 Xanan Xi-Lu, Shanghai 200336 China	+86-21-6275-3322	+86-21-6275-0786		Branch
	EUROPANEL	Westgate, London W5 IUA U.K	+44-181-967-4559	+44-181-967-4002	http://www.europanel.com	Other
MARUZEN CO., LTD.	MARUZEN CO., LTD.	2-3-10, Nihonbashi, Chuo-ku, Tokyo 103-8245, Japan	+81-3-3272-0338	+81-3-3272-7267	http://www.maruzen.co.jp/	Headquarters
	Maruzen International Co., Ltd.	1200 Harbor Blud., 10th Floor, Weehawken, NJ 07087, U.S.A.	+1-201-865-4400	+1-201-865-4845		Subsidiary
Media Research Center, Inc.	Media Research Center, Inc.	Heiwado Bldg 5F, 2-4 Kanda Ogawamachi, Chiyoda-ku, Tokyo 101-0052, Japan	+81-3-3219-7575	+81-3-3219-7377		Headquarters
Metro Inc.	Metro Inc.	Tokai Bldg., 2-4-2 Nishi-Gotanda, Shinagawa-ku, Tokyo 141-0031, Japan	+81-3-3490-5021	+81-3-3490-1069	http://www.metro.co.jp	Headquarters

Table 4 Address of Overseas Service Points(2000:Producers/Distributors)

Company	Contacts	Address	Telephone	Facsimile	Homepage	Status
Metro Inc.	「ACTON」DIRECT	P.O. Box 5059, Lincoln, NE 68505-0059, U.S.A.	+1-402-466-8400	+1-402-466-9074		Partner
National Diet Library (NDL)	National Diet Library (NDL)	1-10-1 Nagata-cho, Chiyoda-ku, Tokyo 100-8924, Japan	+81-3-3581-2331 (Ex.2021)	+81-3-3581-3292	http://www.ndl.go.jp	Headquarters
National Institute of Informatics (NII)	National Institute of Informatics	National Center of Sciences, 2-1-2 Hitotsubashi, Chiyoda-ku Tokyo 101-8430, Japan	+81-3-4212-2145	+81-3-4212-2150	http://www.nii.ac.jp/	Headquarters
NEC Corporation (NEC)	NEC Corporation	5-7-1 Shiba, Minato-ku, Tokyo 108-8001, Japan	+81-3-3454-1111		http://www.biglobe.com	Headquarters
New Glass Forum (NGF)	New Glass Forum	3-1-9 Shinbashi, Minato-ku, Tokyo 105-0004, Japan	+81-3-3595-2775	+81-3-3595-0255	http://www.ngf.or.jp	Headquarters
Nichigai Associates, Inc.	Nichigai Associates, Inc.	#3 Shimokawa Bldg., 1-23-8 Ohmori-kita, Ohta-ku, Tokyo 143-8550, Japan	+81-3-3763-5241	+81-3-3764-0845	http://www.nichigai.co.jp	Headquarters
NIFTY Corporation (@nifty)	NIFTY Corporation	Ohmori BellPort A, 6-26-1 Minami-Ohi, Shinagawa-ku, Tokyo 140-8544, Japan	+81-3-5471-5806		http://www.nifty.com	Headquarters
	MX Engineering Corporation	3F-C No.120 Yumin6 Rd, Peitou Dist, Taipei, Taiwan, R.O.C	+886-2-2827-8457	+886-2-2827-8456		Partner
	Toyo Information Systems(HK)Co., Ltd.	7F, Dah Sing Financial Centre 108, Gloucester Rd,Wanchai, Hong Kong	+852-2598-7171	+852-2598-6126		Partner
NIHON KEIZAI SHIMBUN, INC. (NIKKEI)	Nihon keizai Shimbun, Inc.	1-9-5 Otemachi, Chiyoda-ku, Tokyo 100-8066, Japan	+81-3-5255-2100	+81-3-5255-2809	http://www.nikkei.co.jp	Headquarters
	Nihon Keizai Shimbun America, Inc.	1325 Avenue of the Americas, Suite #2500, New York, NY 10019, U.S.A.	+1-212-261-6240	+1-212-261-6249		Branch
	Nihon Keizai Shimbun Europe, Ltd.	Bush House, North West Wing, Aldwych, London WC2B 4PJ, U.K.	+44-171-379-4994	+44-171-379-0378		Branch
	Nihon Keizai Shimbun Singapore Pte Ltd.	331 North Bridge Road, #13-02/03, Odeon Towers, Singapore 188720	+65-336-4122	+65-336-4016		Branch
	Nihon Keizai Shimbun, Hong Kong Ltd.	Suite 1707B-10, Dah Sing Financial Centre, 108 Gloucester Road, Wanchai, Hong Kong	+852-2598-1771	+852-2845-7768		Branch

Table 4 Address of Overseas Service Points(2000:Producers/Distributors)

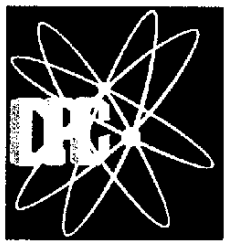
Company	Contacts	Address	Telephone	Facsimile	Homepage	Status
Nippon Statistics Center Ltd.(NSC)	Nippon Statistics Center Ltd.	Tawara-machi City Bldg., 2-10-13, Kotobuki, Taito-ku, Tokyo 111-0042, Japan	+81-3-3847-1701	+81-3-3847-1708	http://www.nihon-toukei.co.jp	Headquarters
	ACTON INTERNATIONAL LTD.	4901 North 57th Street, 68507-3102, Box 5059 Lincoln, NE 68505-0059, U.S.A	+1-402-466-8400	+1-402-466-9074	http://www.acton.com	Partner
Nomura Research Institute, Ltd. (NRI)	Nomura Research Institute, Ltd.	2-2-9 Hongo,Bunkyo-ku, Tokyo 113-0033, Japan	+81-3-5255-1502	+81-3-5255-1877	http://www.nri.co.jp	Headquarters
	Haver Analytics	60 East 42nd Street, Suite 2424, New York, NY U.S.A.	+1-212-986-9300	+1-212-986-5857		Agent
	Nomura Research Institute America, Inc.	2 World financial Center, Building B, New York, NY, U.S.A.	+1-212-667-9010	+1-212-667-1013		Branch
	Nomura Research Institute Europe Limited	Nomura House, 1, St.Martin's-le-Grand, London, U.K.	+44-171-521-3023	+44-171-521-3689		Branch
	WEFA, Inc.	800 Baldwin Tower 1510 Chester Pike Eddystone, PA 19022, U.S.A.	+1-610-490-2553	+1-610-490-2600		Agent
NTT BUSINESS INFORMATION SERVICE, INC.	NTT BUSINESS INFORMATION SERVICE, INC.	Kudan Fuji Bldg., 2-4 kanda Jinbo-cho, Chiyoda-ku, Tokyo 101-0051, Japan	+81-3-5210-0151	+81-3-5210-0155	http://www.nttbis.co.jp	Headquarters
NTT Visual Communication Systems Inc.(NTT-V)	NTT Visual Communication Systems Inc.	1-11-9 Azabudai, Minato-ku, Tokyo 106-8642, Japan	+81-3-3589-1018	+81-3-3505-2800	http://www2.ntt-v.co.jp/	Headquarters
Osaka City Foundation for Urban Technology	Osaka City Foundation for Urban Technology	1-4-1, Minatomachi, Naniwa-ku, Osaka 556-0017 Japan	+81-6-6647-1910	+81-6-6647-1920	http://www.osaka city.or.jp	Headquarters
Protein Research Foundation	Protein Research Foundation	4-1-2, Ina, Minoh-shi, Osaka 562-8686, Japan	+81-727-29-2040	+81-727-29-4124	http://www.prf.or.jp/	Headquarters
QUICK Corp.	QUICK Corp.	Otemachi Bldg., 1-6-1 Otemachi, Chiyoda-ku, Tokyo 100-0004, Japan	+81-3-3216-5911	+81-3-3287-0836	http://www.quick.co.jp/	Headquarters
	QUICK AMERICA CORPORATION	Two Wall Street, Suite 520, New York, NY 10005, U.S.A.	+1-212-720-4960	+1-212-720-4989		Subsidiary
	QUICK Corp. London Branch	65 Clifton Street, London EC2A 4JE, U.K.	+44-20-7247-2222	+44-20-7377-2201		Branch
	QUICK Corp. Hong Kong Representative Office	Room 3001, Sino Plaza, 255-257, Gloucester Road, Causeway Bay, Hong Kong	+852-2831-9888	+852-2831-9868		Representative Office

Table 4 Address of Overseas Service Points(2000:Producers/Distributors)

Company	Contacts	Address	Telephone	Facsimile	Homepage	Status
Research Institute of Human Engineering for Quality Life(HQL)	Research Institute of Human Engineering for Quality Life	Dokita-Daibiru Bldg.3F., 1-2-5, Dojima, Kita-ku, Osaka 530-0003, Japan	+81-6-6346-0234	+81-6-6346-0456	http://www.hql.or.jp/	Headquarters
Research Institute of International Trade and Industry (RITI)	Research Institute of International Trade and Industry	Kobiki-kan Ginza Bldg., 2-8-9 Ginza, Chuo-ku Tokyo 104-0061 Japan	+81-3-3535-5348	+81-3-3535-5347	http://www.chosakai.or.jp/center/	Headquarters
Research Organization for Information of Science & Technology (RIST)	Research Organization for Information of Science & Technology (RIST)	Shirakata-Shirane 2-4, Tokai-mura, Naka-gun, Ibaraki 319-1106, Japan	+81-29-283-3833	+81-29-283-3811		Headquarters
Rural Culture Association	Rural Culture Association	7-6-1 Akasaka, Minato-ku, Tokyo 107-8668, Japan	+81-3-3585-1149	+81-3-3585-6466	http://www.ruralnet.or.jp/	Headquarters
Technomics, Inc.	Technomics, Inc.	Nihonbashi TM Bldg., 1-8-11 Nihonbashi Horidome-cho, Chuo-ku, Tokyo 103-0012, Japan	+81-3-3666-2952	+81-3-3666-2730	http://www.technomics.co.jp	Headquarters
TEIKOKU DATABANK, LTD. (TDB)	TEIKOKU DATABANK, LTD.	2-5-20 Minami-Aoyama, Minato-ku, Tokyo 107-8680, Japan	+81-3-5775-3092	+81-3-5775-3099	http://www.tdb.co.jp/	Headquarters
	TEIKOKU DATABANK AMERICA, INC.	747 Third Avenue, 25th Fl., New York, NY 10017, U.S.A	+1-212-421-9805	+1-212-421-9806		Branch
The Energy Conservation Center, Japan (ECCJ)	The Energy Conservation Center, Japan	3-19-9, Hatchobori, Chuo-ku, Tokyo 104-0032, Japan	+81-3-5543-3017	+81-3-5543-3021	http://www.eccj.or.jp	Headquarters
The Energy Data and Modelling Center, The Institute of Energy Economics, JAPAN (EDMC)	The Energy Data and Modelling Center, The Institute of Energy Economics, JAPAN	Inui Bldg., Kachidoki, 1-13-1, Kachidoki, Chuo-ku, Tokyo 104-0054	+81-3-5547-0215	+81-3-5547-0226	http://www.ieej.or.jp/edmc/	Headquarters
The Foundation of Kyushu Industrial Technology Center(KITEC)	The Foundation of Kyushu Industrial Technology Center	Morimen Bldg., 2-17-5, Hakataeki-Higashi, Hakata-ku, Fukuoka 812-0013, Japan	+81-92-411-7391	+81-92-472-6609	http://www.kitec.or.jp	Headquarters
The Japan Shipping Exchange, Inc.(JSE)	The Japan Shipping Exchange, Inc.	Wajun Bldg. 3rd Fl., 2-22-2, Koishikawa, Bunkyo-ku, Tokyo 112-0002, Japan	+81-3-5802-8361	+81-3-5802-8371	http://www.jseinc.org/	Headquarters
The Japan Times, Ltd. (Japan Times)	The Japan Times, Ltd.	4-5-4, Shibaura, Minato-ku, Tokyo 108-0014, Japan	+81-3-3453-3946	+81-3-3453-6095		Headquarters
	JT USA Inc.	3655 Torrance, Blud., Suite 430, Torrance, CA 90503 U.S.A	+1-310-540-6862	+1-310-540-3462		Branch
THE MAINICHI NEWSPAPERS(Mainichi INTERACTIVE)	THE MAINICHI NEWSPAPERS	1-1-1, Hitotsubashi, Chiyoda-ku, Tokyo 100-8051, Japan	+81-3-3212-1819	+81-3-3212-5122	http://www.mainichi.co.jp	Headquarters
THE YOMIURI SHIMBUN	THE YOMIURI SHIMBUN	1-7-1 Otemachi, Chiyoda-ku, Tokyo 100-8055, Japan	+81-3-3217-9884	+81-3-3217-8279	http://www.yomiuri.co.jp/	Headquarters

Table 4 Address of Overseas Service Points(2000:Producers/Distributors)

Company	Contacts	Address	Telephone	Facsimile	Homepage	Status
TKC Corporation(TKC)	TKC Cororation	2-1 Ageba-cho, Shinjuku-ku, Tokyo 162-8585 Japan	+81-3-3266-9244	+81-3-3266-9169	http://www.tkc.co.jp	Headquarters
TMC CO., Ltd.	TMC CO., Ltd.	Tatsu Bldg., 1-18-2, Ginza, Chuo-ku, Tokyo 104-0061, Japan	+81-3-3567-1906	+81-3-3567-2014	http://www.medie.co.jp	Headquarters
TOHAN CO., LTD	TOHAN CO., LTD	6-24, Higashigoken-cho, Shinjuku-ku, Tokyo 162-8710, Japan	+81-3-3266-9517	+81-3-3235-1726	http://www.tohan.ne.jp	Headquarters
TOKYO SHOKO RESEARCH, LTD.(TSR)	TOKYO SHOKO RESEARCH, LTD.	Shin-ichi Bldg., 1-9-6 Shinbashi, Minato-ku, Tokyo 105-0004, Japan	+81-3-3574-2258	+81-3-3574-2224	http://www.tsr-net.co.jp	Headquarters
	Dun & Brad Street Information Services	One Diamond Hill Road, Murray Hill, NJ 07974, U.S.A	+1-908-665-5104			Partner
TOYO KEIZAI INC.	TOYO KEIZAI INC.	1-2-1 Nihonbashi Hongoku-cho, chuo-ku, Tokyo 103-8345, Japan	+81-3-3246-5511	+81-3-3242-4067	http://www.toyokeizai.co.jp/	Headquarters
	Factset Research Systems Inc.	One Greenwich Plaza, Greenwich, Conneticut 06830, U.S.A.	+1-203-863-1500	+1-203-863-1501	http://www.factset.com	Agent
TOYO KEIZAI INC.	TOYO KEIZAI AMERICA INC.	380 Lexington Ave., 45th Fl., New York, NY 10168, U.S.A.	+1-212-949-6737	+1-212-949-6648		Branch



Database Promotion Center, Japan

Please send the **ORDER FORM** to:

Planning Div.
Database Promotion Center, Japan
5th Floor, Shinbashi-Towa Bldg.,
2-13-8, Shinbashi, Minato-ku,
Tokyo 105-0004 Japan
TEL: +81-3-3508-2430
FAX: +81-3-3508-2440

ORDER FORM

Please type or use block letters.

Please send me the items checked below:

☐ Databases in Japan 2000 — $40 per first copy (including air mail charge)

☐ I would like to receive ( ) copies: — $30 per additional copy (including air mail charge)

☐ Bill me

Total: $ _____

Signature: _____ Date: _____

Name: _____

Title: _____

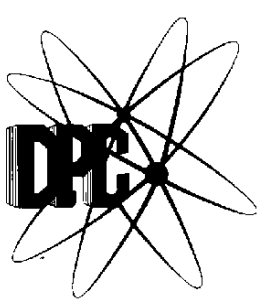
Department: _____

Organization: _____

Address: _____ Fax: _____

Published
by
Database Promotion Center, Japan
5th Floor, Shinbashi-Towa Bldg., 2-13-8,
Shinbashi, Minato-ku, Tokyo 105-0004 Japan
TEL: +81-3-3508-2430
FAX: +81-3-3508-2440

URL: http://www.dpc.or.jp



Database Promotion Center, Japan

5th Floor, Shinbashi-Towa Bldg.,
2-13-8, Shinbashi, Minato-ku, Tokyo 105-0004 Japan
Tel : +81-3-3508-2430 Fax : +81-3-3508-2440
http://www.dpc.or.jp