

16 Research and Study on the Future Image of the Protection of Intellectual Properties

— On the Preparation of Infrastructures for Intellectual Property Researches —

Surveys and reviews were made on how the database accessible comprehensively and efficiently to the integrated information for intellectual properties should be prepared in order to utilize them appropriately thereby to protect the intellectual properties themselves under the circumferential condition that the importance of intellectual properties has been highly recognized.

In case of preparing a database, various points should be reviewed including the purpose of its preparation, the clarification of users and ranges to be applied, the system construction for applying it continuously, subjects to be covered by database and so on. Also, on whether the prepared database will be offered free or charged for, the administration plan should be framed in advance from the viewpoints of not only the cost recovery but also the fact that it will basically determine the nature of the services provided by the database.

When preparing the book database related to the intellectual property, "the Nippon Decimal Classification" is insufficient when classifying them, so that it is required to arrange synonyms thereby to make clear the basis on which the classification will be made.

I The Purpose of Surveys and Reviews

Necessity of Intellectual Properties Database

There is an increasingly growing tendency toward recognizing the importance of intellectual properties including patents in the industrial fields and research institutions. Under such a circumstance, conflicts about intellectual properties have been yearly increased in number and scale. Recently, additionally to manufactures playing a main leader in the intellectual property field previously, internet-related companies, financial and insurance industries are largely interesting in intellectual properties including patent. Furthermore, medical researchers are showing interest in them in parallel with the growth of biological technologies. As a result, interests in intellectual property have been rapidly deepened in many industrial fields.

Under such a circumstance, researchers of intellectual properties are increased in number in many universities, however, due to the fact that the intellectual property field has a scientific significance by its nature, papers on intellectual properties are not necessarily appeared in those specializing in the subject of intellectual properties. As a result, in order to investigate papers on intellectual property comprehensively, researchers are required to collect academic magazines of many different fields thereby to find papers from the contents of respective magazines that are collected. This is complex

and inconvenient.

Besides, large number of commentaries and papers on intellectual properties and related documents have been published, however, such a database does not exist that these commentaries, papers and documents are systematically stored so as to make them retrievable.

In order to develop the research on the intellectual properties as well as to spread the knowledge of them to researchers concerning the intellectual property, it is essentially important that a database arranged so as to be easily used is provided for any study materials and books on intellectual property.

In consideration of such situation, in this survey and review process, we have tried to set the direction for forming an intellectual properties database and arrange libraries for studying intellectual properties.

II Subjects to Be Overcome in Building Database

2-1 Definition and Classification of Databases

(1) What is a Database?

The Database White Paper published by the Database Promotion Center, Japan (an incorporated foundation) says that the definition of database is becoming unclear with the emergence of multi-media concept, and it is natural to define the data collection that satisfies the following criteria as a database. And the white paper lists up the following criteria to be

satisfied as;

- ① A systematically arranged or arrange-able data collection related to a particular subject. The systemitically arranged or arrange-able state is a state that has some structural arrangement in it, hierarchical or link structure;
- ② A user can specify only the necessary information out of the collection of data and retrieve them as a partial data information; and
- ③ PCs, PDAs (personal digital assistants) and other kinds of computerized information terminal equipments can retrieve and process the information obtained from the collection of data.

(2) Classification of Databases

The typical classifications of databases are made according to the data type (a), the data subject (b), the data providing method (c) and the data application (d).

2-2 Consideration Points When Making a Database

(1) Objects of Making a Database

First, it is required to clarify the objects of making a database. For this, two objects can be pointed out such that the information should be shared within an organization and the information should be provided to both inside and outside the organization. With the first object saying "being shared", the providers and users are the same in many cases. On the other hand, with the second object saying "being provided with the information, the providers and users of the information are different from each other. Also, in the case of the first object, it is required to introduce the stipulated experiences and know-hows and softwares for analyzing numerical data other than the information that are shared, leading eventually to a knowledge management system.

(2) Clarification of the Target Users and the Range of Offered Information.

In case the information are provided externally of the organization, it is required to clarify the range where the internal data are to be provided and build a system for checking the range where the data are to be provided when providing the internal data.

A particularly noticeable point in this case is that the users' needs (for example, what kind of data is needed at what level) should be fully known.

(3) Building an Organized System

In respect of a database, the quantity of data is frequently inverted to the quality of it. As a result, it is desirable that, particularly in case of

documental information database, the preparation of database is continuously kept once it is started. For this, it is required to make a system for continuing the preparation of it for a long period of time. As a result, a division or committee having at least one full-time expert should be established.

Also, the preparation of a database requires the knowledges related to the range covered by the database and the preparation of the database. This means that the full-time expert must be well versed in intellectual properties. In this case, it is needless to say that the full-time expert should be trained in the database preparation (especially in preparing abstrats and making key-words) in advance.

(4) Subjects to Be Covered by the Database

A database of intellectual properties must first contain magazines specializing in intellectual property field. Also, papers on the intellectual property may be printed even in general juristic and other related magazines. However, it is difficult to read all of them because the number of such magazines is enormously large. For this reason, it is required to determine the "core" journals of papers on the intellectual property.

Referring to the books, the number of targeted ones is enormously large. As a result, it is necessary to establish the system for finding desired ones from the publication list by determining the key-words, authors and publishing companies in advance.

(5) Definition of Extraction Attributes

An intellectual properties databaseshould include related books and reports in addition to magazine articles. Documents of different classification have different attributes to show their own formal information. For example, a magazine article may have attributes such as the title, author, magazine's name, volume, edition, page and publication year, while a book may have attributes such as the title, author, publisher, the number of pages and publication year.

In order to handle these attributes in a single database, it is required to clarify attributes which are over-lapped from each other thereby to determine the necessary ones.

(6) How to Decide the Subject of an Article

In preparing a data concerning the documental information, it is easy to record the information (for example, the title and author) clearly shown in the documents as a data. However, the information concerning the subject are not directly printed in many cases, which means that intellectual works by an expert are needed. Since the article's title contains some words for describing the subject, such words may

be directly used as the subject. However, it cannot be necessarily said that such words can show it accurately, lacking in consistency of words. As shown above, with the information concerning the subject, the ease of use and the ease of preparation are contrary to each other. Accordingly, how to decide the articles subjects at an appropriate level is an important theme for deteming the quality of the database.

① Key-words

In case of preparing a documental information database with no abstract, key-words for representing the subjects may become an indispensable attribute.

Systems having key-words may be broadly classified into three systems, namely, a system utilizing free words, a system utilizing a list of selected words and a system utilizing a thesaurus. In handling the subjects, there is a trade-off relation between the ease of use and the ease of preparation. And these three systems can be characterized in that the ease of use and the ease of preparation are contrary to each other.

With the system utilizing free words, natural languages that we use in ordinary living are used directly as the key-words. Therefore, any words that we have in mind when reading documents can be directly used, being very easy to do.

With the system utilizing a list of selected words, words capable of utilizing for key-words are arranged in the order of symbols to set a list of selected words, which means that usable words are limited as above and any other words than those cannot be utilized. In the case of this system, any personnel who define key-words must confirm that the words that he has in mind are listed, so that this system takes more time to prepare key-words than with the free words system. Furthermore, preparing and maintaining such a list of selected words that shown above will take time.

The thesaurus system shows the upper-level, lower-level and related -words in order to make clear the concept that a word means, so that the concept can be clearly defined as a word^(*1). The time required for defining key-words is almost the same as in the method using a list of selected words, however, preparing and maintaining the thesaurus take much more costs than with a list of selected words.

② Abstracts

Making abstracts is a highly intellectual task and takes more time and work than defining key-words. However, for the users of databases, an abstract can provide them with a summary of the

article, so that the contents of an article can be known to a certain degree even if not reading the article itself. It is a convenient means for them to decide whether or not to read the article itself.

On the other hand, the preparation of abstracts takes a cost more than double compared with the case of preparing key-words. It is a political matter to prepare a database collecting documents as many as possible without abstract while giving a high priority to the comprehensiveness of documents or a database which is a limited document with abstracts while giving preference to the quality of data. Full considerations upon the amount of information data to be handled and the funds available are desired.

(7) How to Provide Information

How to provide information changes depending on the objects of database and the range of users. Several methods are available including the standalone in which the hardware is installed only within the organization or at specified locations, a method in which servers provide information through LAN and a network method (public, private and internet) mainly provides information to the outside. The selection of method depends largely on the expenses required, preparation state of information infrastructure and other factors.

(8) Selection of the Software

At present, there exist many standardized software products that run on the internet and LANs. Accordingly, these products can be commonly used in databases excepting for the verification and registration of data.

Referring to the interface between users, when providing information over the internet, an interface program called Common Gateway Internet (CGI) is required to be developed particularly for the database, other than the combination of web servers and browsers.

Besides, referring to the program for controlling the database itself (Data Base Management System; DBMS), it should be selected depending on the functions that can be provided, thus being necessary to select it from many commercially available ones.

In this case, prices, maintenance fees, upgrading expenses, fault recoveries and other costs should be considered when selecting these software products.

(9) Selection of Hardware and so on

After selecting the optimum software as shown above, the hardware (computers, communication lines, etc.) should be selected. In this case, the processing speed, memory capacity,

(*1) A thesaurus means a collection of key-words having been clarified their mutual relations in the information retrieval field.

capacity of the database storage media (including spare ones), reliability, price, time of delivery, maintenance fees and other costs should be considered.

(10) Determination Whether the Database Service Is Offered Free or Charged

The database services require costs for making and updating the database, developing and administering the system and so on. Particularly, if required to develop a unique information retrieval system or to provide abstracts and indexing analysis, a great amount of costs will be taken. In order to cover these expenses, there exist several methods including a (charged service) method in which the direct users pay for the service and a (free service) method in which unspecified people cover the expenses on an equal basis or unspecified people other than users pay the expenses. The database services with high added-value have required the users to pay some fees previously because such services require extremely large costs.

However, whether the database services should be offered free or charged is not only a problem of collecting costs, but also a problem of basically determining the nature of services to be provided. As a result, a plan should be framed in advance when designing the system.

Namely, while the free service is to offer services voluntarily with no contract between the provider and users, the charged service is made based on the contract between the provider and users that involves some obligations and rights. As a result, the charged service is always required to secure a certain level of quality. For this, the databases should be maintained periodically in order to make sure that the users are able to access it appropriately. On the other hand, the free service usually carries no such obligations. As a result, the provider may suspend the provision of the services for certain reasons.

(11) Framing the Implementation Plan

Usually, in order to frame the implementation plan, data are collected and stored in the database, the software is developed and the hardware is obtained. Then, the test run is carried out. However, in order to prevent costs and time from being wasted before the test run, a test run using a pilot system may be performed. The pilot system includes a limited range of data, functions to be provided to users and trial hardware. Through which, the problems arising in the early stage of development can be clarified.

In order to provide the actual services, it is necessary to define clearly personnel involved and their responsibilities, prepare an operational flow chart from the data collection to the

registration, define how to control the hardware and software of the system, set up a back-up system and security measures, preserve the use records and establish a system in response to any inquiry from users. Also, considerations should be made upon a long-term plan to handle a growing amount of data and users.

In order to execute these tasks, the contents of the cooperation requests toward not only inside but also outside should be made clear. Also, it should be taken in mind to secure the expenses required for these tasks.

III The Present State of Intellectual Properties Databases and Subjects in Making Them

3-1 Intellectual Properties Databases in America

(1) Introduction

In Japan, when considering a plan to make an intellectual properties database, it is very helpful to survey and review databases of the same kind in foreign countries. Here, we will introduce intellectual properties databases of America where a large number of magazines and papers are published on this subject and take considerations upon useful points that we can learn from them when making intellectual properties databases in Japan.

(2) Manual Search

① databases of independent books and works

As a database of independent books and works, first of all, "the Association of American Law Schools, Books Recommended for Libraries" can be pointed out which is compiled by the Association of American Law Schools (an organization having a target to improve the quality of jurists by means of juristic education, and only law schools satisfying the established official standards can be qualified to enter it). This database was compiled originally by the association as a reference book to be kept in their libraries, so that the users can retrieve independent books and works, etc. by referring to it.

With this database, the books are classified, in each field of law, depending on its importance degree into A (most basic ones), B (helpful to some research studies) and C (helpful to unique studies), and describe the bibliographical information, the card number of Library of Congress, author's name, birth year and death year and the title of book as well as the features of each book and a recommendation what type of libraries should have them.

② Database of articles from magazines

A typical database of this kind is "The Index to Legal Periodicals", edited by the American Association of Law Libraries, which was first published in 1926, and the index covers almost all of the juridical magazines published in Anglo Saxon nations and provides the subjects, a list of articles, magazine carrying the articles, volumes, pages, the authors, the date of publications of magazine articles and related items.

In addition, the articles can be retrieved by using the Subject and Author Index. The usefulness of this Index to Legal Periodicals may be its broad coverage property of information.

(3) Computerized Searches

[Commercial databases]

Two typical databases are Lexis and West Law. Lexis is a database provided by Mead Data Central Co. on a commercial basis since 1968. The retrievable information includes, in addition to legislations, juridical precedents and articles published by law views, newspapers, general magazines, news correspondences and business magazines concerning computers, communications, electric industry, chemistry, pharmaceuticals, biotechnologies and other information. The user can be provided with the whole text of all these articles through the database. Also, since 1975, the patent specifications and other documents issued by the Patent and Trademark Office of America can be fully retrieved by users together with the whole of drawings.

West Law is a database provided by West Publishing Co. on a commercial basis since 1975, through which the users can retrieve the juridical precedents, legislations, articles and the like that they intend to search, thus making it possible to be provided with them in the full text form. Compared with the Lexis's case, West Law is characterized in that the users can retrieve the information using the key number system having been utilized by the National Reporter System (U.S. juridical precedent system) that West Publishing Co. has administered since 19th century. The key number system classifies all the issues of the law field into about four hundred categories, and for each issue, its detailed classification is denoted by a number and thereafter a summary of the issue is displayed.

(4) Unification of Citations

In making a database, the unification of citations may be identified as an incidental problem. In America, the unification of citations has been made by "The Bluebook; A Uniform System of Citation".

The law-school thoroughly teaches the students the citation method. As a result, not only students and researchers but also law professionals have stated citations. Therefore,

the readers of articles and other-related documents can easily retrieve the original one from the citation. In addition, the information retrieval using databases is also performed in accordance with the unification of citations.

3-2 How a Database of Intellectual Property-Related Articles Should Be Made

(1) Problems in a Database of Articles

① Diversity of collections of articles

Collections of articles compiled in the category of patent law or copyright law are small in number. Typically, many collections of articles are compiled in the frame-work related to the intellectual property. Also, in some cases, collections of articles on civil laws and anti-monopoly laws have some intellectual property-related ones.

Eventually, the present state is that searching is made by checking the article collections one-by-one through the table of the contents thereby to see whether or not it contains related articles.

② Difficulty of searching articles from the title of an independent book

If clearly recognized as a intellectual property-related article at a glance from the title of a book, it is easy to check the articles contained into the book without exception thereby to check the information provided by them. However, in some cases, it is difficult to make clear whether the book is a collection of articles or commentaries. In addition, if the fields are completely different, incentives for checking do not function across them.

③ Securing wide range of availability of data contained in out-of-print books and those difficult to obtain

Referring to the out-of-print books, their places will not be made clear and even the Diet Library may not store all of them. Old collections of articles and researches are very difficult to obtain even in a street of second-hand book stores and highly expensive even if available, because such books will be grouped into the scarcely available ones. The high prices of these books are because of not their contents but their scarcity, however, they are too high in price to make them available to general researchers. Beside, persons able to access are extremely limited, remaining a problem of securing such a requirement that a wide range of researchers should be able to use them.

In addition, due to the fact that even newly published books are small in number of distribution and limited in area of distribution, making difficult to be available. Even if their places are known, they are not necessarily original ones.

(2) How a Database of Articles Should Be Made

There is lack of electronic data of information contained in independent books such as the article collections and so on, so that it cannot be expected to use them as the electronic data in the earliest possible time. However, this information has been largely demanded from researchers and is very important to be checked from the view-point of securing the priority of articles, being desired to be widely utilized for promoting their application.

In the present state that the environment of intellectual property laws is largely changed and the extent of researchers studying such laws is widened, it is becoming difficult to grasp articles related to the intellectual property laws comprehensively and transversely. As a result, it is urgent-necessary to make researchers in this field possible to grasp the whole picture of the studies of preceding researchers comparatively easily even if the information available is limited only to the titles for the time being.

3-3 Preparation of a Simple Intellectual Properties Database

(1) General

In order to make a database useful toward the future, it is necessary to grasp the users' needs for the information retrieval such as the retrieval is performed by using what keywords, and to demonstrate these needs later in order to collect the basic information required for upgrading the database in the future.

(2) Portal Site for Intellectual Property Documents Retrieval (first stage)

Here, explanations will be made below on the portal site for intellectual property documents retrieval (hereinafter called portal site) to be installed at the first stage.

① Objects

An object of the portal site is to collect information to provide for general users' access

in the future and another object of the portal site is to survey the retrieval results obtained by the experts of intellectual properties.

② Target user to access

The target users to access to this port site are general users and experts in intellectual properties.

③ Information to be provided

The information provided by the portal site to the general users accessing to it are related to the information provided by external databases. Namely, the portal is to prepare a database of databases. In this case, if reached to an external database capable of appropriately providing the information that users need, it is desired to be able to retrieve the information from it. This is for the reason that the history of information retrieval of general users is surveyed to find out their trends.

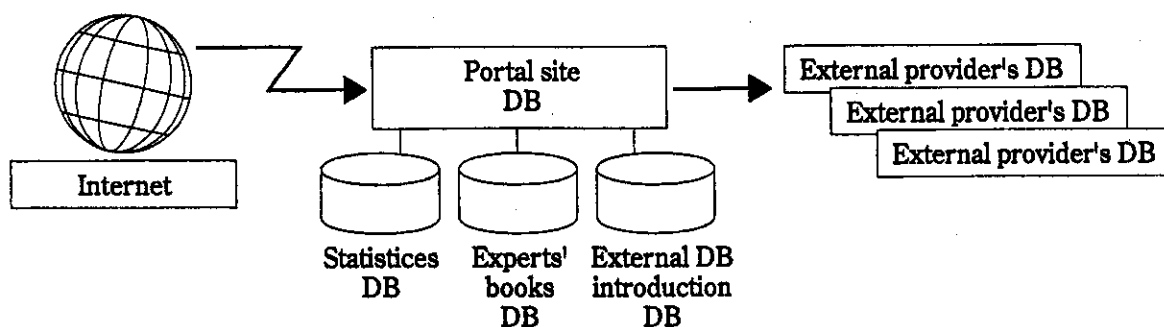
Besides, with the retrieval by experts, the portal site provides the titles of documents for which the retrieval is made, which is due to the fact that this is relatively easy to implement and its utility value is high.

④ Methods of providing information

From the viewpoint of being easy to use, the information should be provided by separating it into the introducing page of databases and retrieval page of documents. Concretely, in the case of the introducing page of databases, the information on the data that users need are mainly collected. For this, first, the users select external databases. Then, such a page should be formed so as to be capable of accumulating the information as the condition of retrieval including a retrieval method to be applied to specified databases.

In addition, in the case of the retrieval page of documents, the users should be allowed to extract book titles and other items by retrieving the information such as the tables of the contents through an actual search engine.

⑤ An example of system structure that is



assumed

The portal site has to be prepared two modules; one for the general users and the other for experts. When considering the frequency of their use, it is estimated to be sufficient to use a single server as an immediate measure.

A concrete example is shown in Fig. 1.

This example will be explained below by referring to Fig. 1. The system of this example is desired to have at least the followings as;

- The portal site is connected to the internet;
- (a) the function capable of displaying the first page of the portal to the users accessing to the data through the internet;
 - (b) the function capable of recording the history of what kind of retrievals has been made;
 - (c) the function capable of introducing the externaldatabases to the general users to record the track of the users guided by using it; and
 - (d) the function capable of transferring the retrieval keys to the external providers' DBs to the users guided as shown in (c).

With the statistics DB, it is desired to record the retrieval keys, the guide to the externaldatabases, etc., which were conducted in the portal site.

With the exports' books DB, it is desired to be formed so as to output the retrieval results for experts' books which are conducted in the portal site. For this, it is desired to record the titles and tables of the contents of experts' books in this DB so as to make the whole text retrieval.

With the external DB introduction DB, it is desired to record the features and other related-points of commercial databases which are scattered outside.

(3) Database for Retrieving Documents on Intellectual Properties (second stage)

By administrating a preparatory database as shown above for some time, it can be known that the users use what kind of retrieval keys and want to use what kind of documents. Based on such historical information, it will be made possible to frame the action plan in the future and prepare the specifications of a database related to the intellectual property as the final target.

IV On the Classification of Intellectual Property-Related Books

4-1 Classifying Method of Intellectual Property-Related Books

As a classifying method being used in bibliographies and index related to the intellectual property in Japan, "The Catalog of Juridical Books of the Supreme Court Library", "The Index to Articles in Japanese Juridical Magazine by the Supreme Court Library", "The General Catalog of Post-World War Juridical Documents (Compiled by the editorial staff of Horitsu Jiho journal and published by Nihon Hyoron Corp)", "The Index to Juridical Magazine Articles (Compiled by the staff of the Juridical System and Research Department of the Ministry of Justice, published by the Commercial Law Center) and "The Nippon Decimal Classification, the 9th newly revised edition (the Japan Library Association)" can be pointed out.

4-2 Criteria of Classification

Referring to the criteria of the classification of issues related to the intellectual property, the three main categories have been used which include the detailed category of laws, formal category (format of documents) and geographical category. Furthermore, the language of description (for example, whether the document is written in Japanese or English) will be considered.

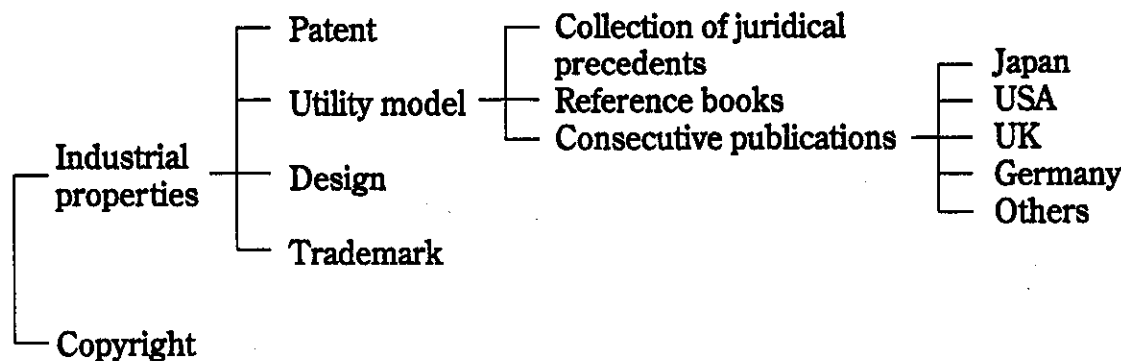
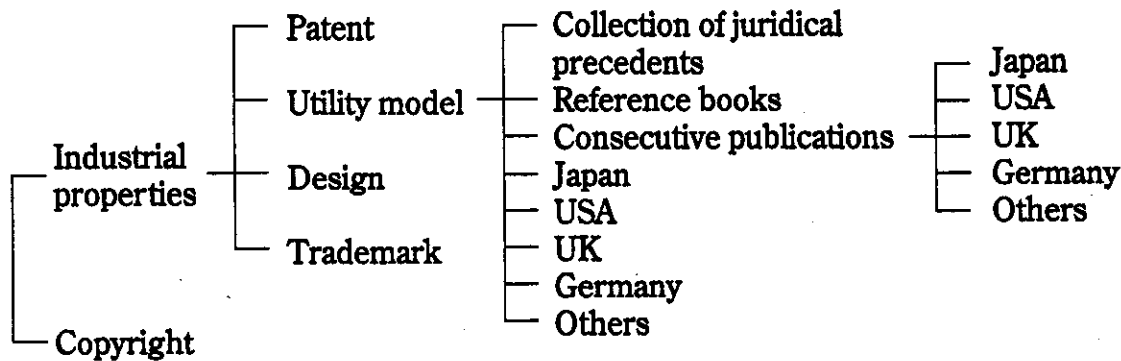
As the consideration points when preparing a classification list, (i) the determination of criteria of each category, (ii) the determination of the names of issues (unification of the names, utilization of classification signs, etc.) and (iii) the method of combining the criteria of classification categories. Here, the explanations will be made on the case of being (iii).

The method of combining the criteria of classification issues can be broadly classified into as;

- ① combining classification criteria in order and
- ② combining classification criteria independently.

(1) Classification of Hierarchal Formats

First, the combination of classification criteria in order results in a classification of hierarchal format. For example, when combining the detailed category of laws, format of documents and geographical category in this order, the following hierarchy may be obtained as;



The hierarchal classification is suited to arrange documents in one-dimensional format to be positioned at a single place respectively, so that the arrangement and order of each item can be determined unitarily.

However, the hierarchal classification cannot change the order of classification criteria freely.

As a method of solving such problems as above, there exists a method that the criteria of the same category are applied at respective hierarchies. For example, by classifying as shown below, both "the consecutive publications for dealing with utility models in Japan" and "the utility models in Japan" may be positioned. Many classifications use this method. However, theoretically, such a problem may be remained that criteria of plural categories may be used in a single classification. In this example, two categories, namely, the document formats and geographical one, are applied simultaneously.

Another problem with the hierarchal classification is how to deal with composite subjects. For example, "the collection of juridical precedents on patents and utility models" cannot be positioned by the above-mentioned classification method, which is due to the fact that the patent and utility model have two different items from each other. Several methods are known for dealing with the composite subject, however, it is difficult to solve such problem basically.

(2) Classification of Multi-dimensional Formats

The combination of classification criteria independently, not in order as in the above-case, results in the multi-dimensional classification. For example, by combining the detailed category of laws and the format of documents independently, the following table may be obtained as;

	Juridical precedents	Reference books	Consecutive publications
Patent	Juridical precedents on patent		
Utility model			
Design			
Trademark			
Copyright			

Combined items are contained in the table. In this example, only the combination of patents and juridical precedents are shown.

	Juridical precedents	Reference books	Consecutive publications
Patent			
Utility model			
Design			
Trademark			
Copyright			

This table also can be shown by the following coordinate format.

By adding the geographical category to this format, a three-dimensional coordinate system one can be obtained.

Besides, the classification may be shown by a list format as shown below;

[Intellectual properties law] : patent, utility model, design, trademark and copyright;

[Document format] : juridical precedents, reference book and consecutive publications;

[Geographical category] : Japan, U.S.A., U.K., Germany and others.

Items may be combined according to the criteria of respective categories.

With the classification of multi-dimensional format, the first problem of the hierarchal classification, namely, how to position "the consecutive publication for dealing with the utility models in Japan" and "the utility models in Japan", may be easily solved.

On the other hand, the problem on how to handle composite subjects cannot be solved basically even by means of the multi-dimensional classification.

The classification of multi-dimensional format is suitable to the classification to be used for retrieving the database information. Actually, when retrieving the database information, such a method that has a multi-dimensional format has been employed. For example, if retrieving "the juridical precedents of patents and utility models, "patent or utility model" is inputted into the intellectual properties law column and "juridical precedents" are inputted into the document formats column.

(3) Combination of Items

"The Nippon Decimal Classification" has an additional table called supplementary table. The supplementary table is one that the items of some classification categories are tabulated separately.

For example, the hierarchal classification described in (1) has written the items of the geographical category only under the consecutive publications. Practically, the geographical category should be also displayed under the juridical precedents or reference books.

However, when the same items are displayed in many positions of a classification table, the number of items may be too large. For example, if two hundred countries are listed as the geographical categories, the application of them

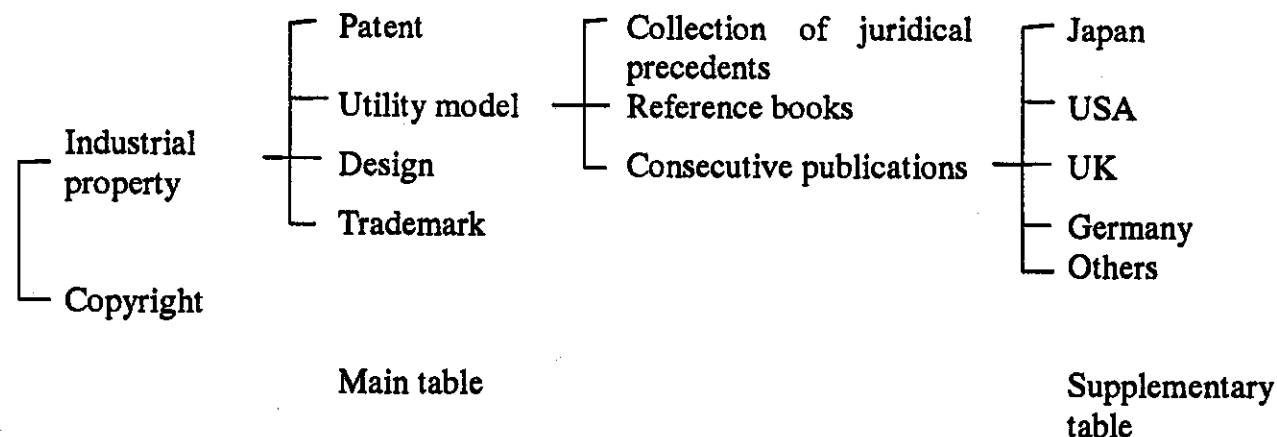
only to ten positions requires two thousand items. As a result, such methods have been invented that the same item is not displayed many times, but displayed only once and combined with that of other categories.

One of these methods is that the items of the geographical category are displayed only in the consecutive publications and only the instruction saying that "apply to the geographical category as the consecutive publication" is displayed to the collection of juridical precedents and reference books.

Another method is a method of using the supplementary table. With this method, the geographical items are positioned outside. In other word, it is divided into a table where all items of geographical regions are removed and a table of geographical categories. In this case, the table having the geographical categories positioned outside is called supplementary table and the table that it has positioned inside is called main table. The combination of the items of the main table and those of the supplementary one forms the original table. In this example, the items of the geographical category were made into a supplementary table, but not limited thereto, the format of documents or the languages of description may be made a supplementary table. Also, plural supplementary table can be also used in combination.

What all items are displayed as the original table is called enumerative display. On the other hand, the case that one category is remained and the other items have onputed only the instruction saying that "subdivide as ~ (the other categories)" or the case of being displayed so as to be divided into the main table and the supplementary table is called combinational display. The Japan Decimal Classification or other major library classification methods use not only the supplementary table but also the instruction saying that "subdivide as ~".

With the combinational display, the rule of combination should be established in order to prevent any combinations that are impossible



theoretically or practically from being taken place. Here, it should be noticed that, for example, if one intends to combine the designing laws with any other countries, there can be the combination only with countries having established the designing laws. Namely, the combination display is better than the enumerative one in that the number of items can be reduced, however, in many cases, the former is difficult to use compared with the latter because of the necessity of the rule of combination. In the case of enumerative display, all items are displayed so that the users can easily search for the items that they intend to, being easy to use compared with the combination display in general.

V How Intellectual Properties Database and Library Should Be Made

5-1 How Intellectual Properties Database Should Be Made

5-1-1 Contents of Intellectual Properties Database

(1) Range and Items to Be Covered by Database

In considerations upon the purpose of this survey and review, the followings can be estimated as a target of the database as;

- (i) Articles inserted into major related academic magazines;
- (ii) Books;
- (iii) Reports prepared by intellectual property-related organizations;
- (iv) Data prepared by governmental agencies;
- (v) Juridical precedents;
- (vi) Related legislations;
- (vii) Statistic information;
- (viii) Information on legal rights;
- (ix) Information from newspapers; and
- (x) Academic magazines and publications from abroad.

Out of which, the targets shown in (i) to (iii) and (x) are actually set in preparing the database and bibliographical information such as the author's names are contained so as to be retrievable.

The data prepared by governmental agencies (iv) and statistic information (vii) are frequently contained into the homepages of governmental agencies. As a result, in the case of this database, only what data prepared by governmental agencies and statistic information are available and they are made available by what means will be contained.

Referring to the juridical precedents (v) and

the related legislations (vi), CD-ROMs having good contents have been marketed now and only the information on the juridical precedents database and related legislations database will be contained.

Referring to the information on legal rights (viii) and information from newspapers (ix), detailed information have been already made available, so that this database has no need to contain them.

(2) Time Period for Preparing the Database

In order to prepare a database, it is desired to have the time period as long as possible. However, from the viewpoint of effective use, the database will be made so as to be contained successively from the latest documents retroactively to the past ones.

Referring to the articles inserted into major related academic magazines (i), books (ii), reports prepared by intellectual property-related organizations (iii) and data prepared by governmental agencies (iv), at present, the preparation of database will be made satisfactory by containing them retroactively to the last decade while taking considerations upon their use-values.

However, in the case of books (ii), old ones will be frequently required when surveying the history of systems. However, old books' database is not necessarily enough compared with the case of new books. As a result, it is very important to prepare databases containing information from old books from the viewpoint of preventing the loss of them. Accordingly, it is desired to prepare a database containing information from old books so as to be provided with information positively from the outside.

Besides, it should be noticed to clearly describe the information on the storing period in the database.

(3) Making Order of Database

Articles inserted into major related academic magazines (i) should be of the highest priority, because articles play a main role in doing studies and there is no satisfactory database at present in the field of intellectual properties field.

Referring to the books (ii), in the case of the commemorative collection of articles and so on, it should be started to contain the titles and authors' names of respective articles. General books can be considered so as not to be urgently recorded because the databases for the retrieval use have been already prepared by the Diet Library, bookstores, distributors and so on, though being not specialized in the intellectual property field.

In parallel to this, the reports prepared by intellectual property-related organizations (iii) are contained into the database. Due to the fact

that there exist only a small number of databases containing such reports, they are not so much utilized at present. Therefore, the preparation of databases should be progressed from the viewpoint of promoting their utilization.

Referring to the data prepared by governmental agencies (iv), a simple one should be prepared such as the list of data prepared by governmental agencies having contained bibliographical information.

Referring to the academic magazines and publications from abroad (x), due to the fact that it takes a time to survey and is necessary to be translated into required languages, it should be carried out after achieving the targets described from (i) through (iv) by actively using the know-hows thus obtained. At present, the introductions of major foreign research institutes (including universities) or foreign databases will be an idea.

Referring to the juridical precedents (v), related legislations (vi) and statistic information (vii), only where the information were obtained from should be introduced.

(4) Update of the Database

Basically, the database should be updated every month.

Referring to the articles inserted into major related academic magazines (i), the academic magazines to be targeted should be reviewed annually.

Referring to the books (ii), the keywords should be reviewed annually.

Basically, the targets should be reviewed in the direction not to be removed but to be increased.

When reviewing, whether or not the back part should be updated should be reviewed each time depending on its contents.

(In reviewing, opinions and needs should be asked to the users of databases to be provided with the information that are lacked.)

(5) Preparation of the Environment for Making the Database

When making the database, what kind of hardwares is necessary to be prepared depends on its capacity and the method for providing the information. While considering the cost and future developmental direction, and appropriately sized-one should be prepared.

The selection of the software to be used for making the databases should be made while considering the developmental direction in the future, because it depends on the capacity of the database and the retrieval method.

5-1-2 Method of Providing Information From the Database

(1) Means of Providing Information From the

Database

When considering the case of access and updating, an internet homepage is better than the independent media such as CD-ROMs.

The targets shown in (i) through (iv) should be contained into the homepage of the Institute of Intellectual Property (hereinafter called IIP).

Referring to the targets shown in (v) through (vii), as reviewed in the above-section (5-1-1), only the point that what type of retrieval means can be obtained should be carried in the homepage of IIP.

(2) Service Rates - Free or Charged

From the viewpoint of promoting their applications, it should be made free, however, when taking considerations upon the maintenances of the database, there arises such a thinking way that it should be charged in order to construct the system capable of performing the maintenance responsibly.

After surveying and reviewing whether other similar database services are offered free or charged, it should be determined by taking considerations upon the cost required to make this database or how much value of the information this database can provide when opened.

(3) Link with Related-Databases

It is very meaningful to survey other related databases in order to make a database of the other related databases. Links should be set between the related database and database thus made.

If the linked related database can be retrieved by using the keywords from the database made by IIP, it will become easy to use. As a result, it should be considered on the possibility of making "a database of databases".

Referring to the database of reports and the like, the facility will be improved by collecting them in one database so as to be retrieved by using keywords.

5-1-3 Consideration Points in Making a Database

(1) Construction of a Pilot System

In constructing a database capable of offering great value to the users, it is important that the basic design of a system is determined before starting the construction, then, a small-scaled data are inputted and thereafter, the problems of the system are found out by using the data obtained.

(2) Problems Involving Copyright when Inputted into Electronic Media

Because a book or article has a copyright of its author, it is necessary to request each author for permission, which is difficult to be realizable actually. Particularly, documents published in

the past are extremely difficult to be contained in the database.

In case of the bibliographic information such as the titles of books and articles or authors' names, there will be no problem.

(3) Negotiations with Publishers in Containing Them into the Database

When containing academic magazines and reports published by governmental agencies, it is necessary to obtain the permission of the publishers.

Referring to the books (ii), it is necessary to negotiate with the makers of existing databases on whether or not these database may be employed.

(4) Unification of Data Input Formats

It is important to unify the data input formats in order to prevent the omission of retrieving information. The formats should be determined in advance, for example, concerning whether numbers are to be entered in full-size characters or in half-size ones, how much space should be taken between characters, how the pages of articles should be recorded when to be opened and the other.

(5) Guarantee of Expanding the Database in the Future

In designing a database, it is important to design the database so as to easily cope with the enlargement and change of the targets and contents of it.

(6) Personnel Arrangement

A personnel who administers the whole of works should be assigned in order to progress the operations continuously and uniformly even when the input operations of data are entrusted to outside.

5-2 How the Intellectual Property - Related Libraries Should Be Made

5-2-1 Installation of an Intellectual Properties Library

In order to facilitate the works of researchers studying subjects related to intellectual property, it is desired that IIP should be made open as an intellectual property-related library to the general people.

5-2-2 How the Library Should Be Managed

(1) Management of the Library

In order to manage the books, magazines and the like stored in the library, it is necessary to prepare a book database with retrieval functions clearly specifying the shelves where books, magazines and the like are respectively positioned.

In preparing the book database, it is effective to use the data proposed in 5-1, including the articles contained into major related academic magazines, books and the like.

The book database is desired to be published in the IIP's homepage by being connected with the intellectual properties database proposed in 5-1.

(2) Classification

As considered in Chapter IV, the Nippon Decimal Classification (NDC) is unsatisfactory in the intellectual property field because it is too rough.

When classifying, first, the synonyms should be arranged.

In order to retrieve it, a single book should be classified from the viewpoint of many criteria, however, when placing it in shelves, it is important to determine the priority order of classifications on a criterion basis. Basically, it will be effective to place them in shelves according to the kind of the legislation from the viewpoint of the case of use.

However, referring to the data prepared by governmental agencies (iv) and the reports prepared by organizations related to intellectual properties (iii), it is desired to be placed in shelves according to their publishers for the sake of case of use and arrangement.

In case of the legislation category having many publications such as the patent law, sub-categories may be useful. For example, such publications can be further classified into sub-categories including the application procedure, examination, license, lawsuit and the like.

In addition, the books from abroad can be classified in the same thinking-way as above.

(3) Lending and Copying

When taking considerations on the internal use of books and the difficulties of management of them kept by IIP, it is reasonable not to lend them at present.

Besides, the copying is to be prohibited excepting those that IIP has their copyrights and those that the copyright owners have granted the permission for copying.

(4) Expansion of Library's Stock of Books

The book database and the like should be frequently retrieved to purchase newly published ones. At the same time, the library database should be successively updated.

Academic magazines having been purchased periodically are necessary to be reviewed at a constant interval of time.

Also, the data prepared by governmental agencies (being not always on sale), the reports prepared by organizations related to the intellectual property and the like should be successively purchased, classified and placed in

shelves.

(5) Personnel Arrangement

In order to collect and administer about ten thousand books and manage the reading room, it is desired to assign a full-time librarian (or equivalent thereto).

VI Summary

The objects of this committee is to make a database related to intellectual properties and to propose the fundamental conditions for installing a library of IIP within the institute as a part of the infra-structuring activities for researchers related to the intellectual property. Some databases related to the intellectual property have already been made available, however, they are limited to be used only as a part of those related to the legislation. As a result, they are not necessarily satisfactory to meet the requirements of users because of being shortage in comprehensiveness, reliability, reporting speed, efficiency and the like which are required to a database. In order to eliminate such defects and promote the use of the results of researches in the intellectual property field further smoothly, which will be further increased in the future, it is demanded to make an original database related to the intellectual property.

In addition, with ten year having passed since the IIP's establishment, problems to be overcome in the future are how to arrange books, magazines and other documents largely collected previously and how to open them not only to the inside researchers but also to the outside researchers for the sake of the ease of use by the researchers.

This committee proposes here only the basic requirements and problems to be overcome in the future, which are involved in making an intellectual properties database. In order to connect these proposals with the actual preparation of the database, it is necessary to survey and review them from the more concrete viewpoint. For this, it is desired to realize such activities practically as early as possible under the cooperation with related personnels.

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