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**Bibliographic Control in Korea:
focused on the National Library of Korea**

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Abstract

The terminology “bibliographic control” is a word combining the archaic word of “bibliography” and the mechanical word of “control” and it might be associated with the word “convergence,” which is one of the catchwords of today. National libraries have conducted numerous researches on how to collect, organize, and make extensively useful information published in their nations. The National Library of Korea (NLK) is no exception in this endeavor. This paper has been written to provide an overview on bibliographic control activities in Korea with focus on NLK.

1. The National Library of Korea and Bibliographic Utilities

NLK, established in 1945, comes under the Ministry of Culture and Tourism. Under the Library and Reading Promotion Act (Law No. 6906), NLK operates as a national representative library of Korea. It is responsible for collecting, organizing, preserving and disseminating library materials and information. It also provides the wide public with library services. The library service targets are researchers, organizations, other libraries and anybody adults or children. The National Library for Children and Young Adults (NLCY) was opened on June 28, 2006 as a branch of NLK. The NLCY provides library services for children's materials and related materials published in Korea and in other countries. NLK became a library policy authority since November 2004. This duty will base its ability to lead the Korean library community. In a society pursuing super speedy service, library service is needed in ever more distinctive ways, one being efficient bibliographic control. If we provide better, easier, and speedier library service through bibliographic control, covering all processing from legal deposit to the systematizing of information, the library can meet user's demands for service.

Activities performed by the NLK in relation to bibliographic control include operating the Legal Deposit system, developing and disseminating national standards for national bibliography, managing the union catalog KOLIS-NET (Korean Library Information System-Network) and establishing the national digital library. Such activities are conducted on the basis of cooperation among libraries. In particular, cooperation with other bibliographic utilities (the offering and sharing of bibliographic information) serves as an important foundation for the realization of bibliographic control.

There are few bibliographic utilities in Korea: such as the Korea Education and Research Information Service (KERIS) and the Korea Institute of Science and Technology Information (KISTI). In addition, there are several union catalogs by theme, such as on medicine, theology, and law, as well as regional union catalogs, among them, the union catalog of KERIS linked to KOLIS-NET. The project to share full text data through the National Digital Library (NDL) of NLK is participated in by seven other institutions: National Assembly Library, the Supreme Court Library of Korea, the Science Library of the Korea Advanced Institute of Science and Technology (KAIST), KERIS, KISTI, and the Agricultural Science Digital Library of the Rural Development Administration, and National Knowledge Portal. NDL provides not only bibliographic data but also full-text data from these organizations by meta-search techniques.

2. Operation of the Legal Deposit

The Legal Deposit was launched on the basis of the Library Act (Law No. 1424), enacted in 1963, and Library Act Enforcement Decree, enacted in 1965 (Presidential Decree No. 2086). The Act of 1963 stipulates "domestic publishers and publishing organizations of other publications shall submit three copies of their publications or periodicals within 30 days of their publishing date to NLK." NLK has the responsibility and obligation to create a national bibliography based on deposited materials.

In early days, deposited materials were mainly printed materials. Following the amendment of the Library Act in 1987 and the enactment of the Library and Reading Promotion Act in 1991, not only maps and music recordings but also computerized data were included in the items subject to the legal deposit system. Thus most of the non-book materials became subject to Legal Deposit. With the enactment of the Library and Reading Promotion Act, a regional

representative library system was launched by region. In order to increase the deposit rate, NLK designated the regional representative libraries as agent libraries for the legal deposit system, providing convenience to regional publishers obligated to deposit publications. Currently, the legal deposit rate reached more than 95%, compared to sales catalogs of the largest bookstore. When the composition of library collections is examined, collections acquired through the Legal Deposit account for approximately 70 percent of the entire library collections.

In a bid to acquire a comprehensive collection, through means other than the Legal Deposit, NLK is striving to secure materials that were published before the implementation of the Legal Deposit System. This process encompasses confirmation of whether or not certain materials are in the library collection because of the use of other bibliographic utilities, and acquisition of those not in the collection, either through purchase or photo printing projects. Furthermore, the Library is collecting books and materials not in its collection through a donation campaign named *Haetsal-gadeukhan-dalakbang* (literally meaning “an attic filled with sunshine”).

Although the Library has been expanding its scope regarding the legal deposit system through laws and employing a variety of acquisition methods, the rapidly increasing online materials available only on the Web are not included in the scope of the legal deposit system due to the lack of a legal provision. In order to overcome such limitations, the Library encourages publishers to deposit their online publications voluntarily, yet the issue of compensation for deposited materials still remains unresolved.

In order to provide to the maximum information necessary to users, material acquisition should be made in a seamless fashion through improvement of the legal deposit and impeccable cataloging of library collections acquired through deposit. If such deposits are not made impeccably, the value of a national bibliography as historical records diminishes. Therefore, the legal deposit calls for an improvement for a comprehensive material collection. To this end, the amendment of the Library Act, which serves as the basis for the operation of the legal deposit, has been actively promoted since 2005. NLK is striving to include digital information resources in the provision subject to the legal deposit by participating in the amendment of the Library Act.

3. National Bibliography

3.1 Scope

The legal deposit provision of the Library Act covers books, serials, newspapers, records, videotapes, cassette tapes, maps, slides, microform materials, magnetic tapes or CD-ROMs, etc. All those kinds of materials are included in the National Bibliography.

In general, a national bibliography is compiled all publications published in their countries or abroad. Korean National Bibliography, however, covers only materials published in Korea. For example, Koreana (a tentative name), including all the publications in the Korean language published abroad, translations of Korean authors' work, and publications about Korea and the Koreans, not included in the current National Bibliography.

With respect to digital resources on the Web, they are collected through a Web archiving program called OASIS (Online Archiving & Searching Internet Sources). The phase 1 project

of OASIS was implemented in 2003, and it is currently in a pilot operation, and its service for the general public was launched in February 2006. The OASIS system can process various types of multimedia, including photographs, moving pictures, and music, in addition to general documents from the nation's online resources on the Internet. It effectively manages a number of mirroring sites, while monitoring the update of relevant Web sites. It enables managing and updating agreements of copyrights from among Web resources and supports speedy and efficient search of resources by applying specialized search engines.

The OASIS system adopted Dublin Core as descriptive metadata of resources and has been established on the basis of international standards such as the OASIS reference model. The system collects information through Web robots and automatically classifies through double checks and accumulates bibliographic information in the Dublin Core format.

3.2 Format

Current bibliography is offered online through the *Korean National Bibliography Weekly* on the NLK homepage. Moreover, the Library operates e-CIP (electronic cataloging in publication) offering online cataloging on forthcoming publications and also offers MARC (machine readable cataloging) records. Since 2005, retrospective bibliography has been produced and distributed in the form of DVDs under the title of the *Korean National Bibliography*. The National Bibliography was published in the form of a book from 1963 to 1993. During the next 10 years, both books and CD-ROMs coexisted. Now the Bibliography is provided in DVD and on the Web. From the DVD the bibliographic records can be downloaded in Korean Standard Character Code or Unicode. The Korean bibliographic records using Unicode are handy for finding information on Korea overseas.

3.3 Production of Retrospective Bibliography and Union Catalogs

Through the catalog-centered computerization system introduced in 1980, printed card catalog was distributed from 1982. As the library automation project was launched in a full-fledged manner, in order to fulfill its functions stipulated in the Library Act of "overseeing the national literature information system and library cooperation networks through computerization," NLK formulated and implemented the "Plan on Building Library Information Computer Network." The plan centers on jointly building and utilizing database on bibliographic data by forming KOLIS-NET, which systematically connects leading libraries in the nation and overseas institutions dealing with bibliographic information dissemination during between 1991 and 1997. NLK developed the Korean Library Automation System (KOLAS) in 1992, which is the software for public library data processing. This software distributed widely to public libraries free. Via KOLIS-NET and KOLAS, the distribution of printed card catalog substituted for *Korean MARC on Disc*.

In 1998, an integrated information system was developed, and a project to input retrospective data of the National Library of Korea into computers was launched. This project was a kind of public works project with high employment effects under the stewardship of the International Monetary Fund due to a financial crisis at that time and a large-scale database was built in a short period of time. Under the project, catalog input into computerized retrospective data of the Library from 1991 to 2000 proceeded, serving as main bibliographic data for KOLIS-NET and bibliographic data from libraries nationwide was added, creating the union catalog. By allowing users to download bibliographic records on KOLIS-NET, the Library is seeking to promote sharing of bibliographic data and publicizing information on collections of domestic libraries.

Retrospective bibliographic records were produced for books, serials, non-book materials, microform, and so on. By building a bibliographic database on rare books and documents and offering it with full-text data, the Library is heightening the utilization of precious cultural properties of classical records.

Concerning rare books, the Library has been building the Korean rare books union catalog since 2005. This project was scheduled for 7 years. There were 28 member libraries that had built bibliographic records totaling more than 1 million items as of 2005. The database is expected to be further increased by individual collectors of rare books are anticipated to participate in the project.

At the start of the 21st century the Ministry of Culture and Tourism established the “Library Information Promotion Plan.” The new library policy aimed at responding to a knowledge-based society with NLK performing a critical role. The plan was formulated to improve the internet environments of public libraries, which were outdated, compared to the overall social environment, and transform it into a hybrid-type service system. The plan was implemented in two phases. The first phase was implemented during 2000-2002, mainly by supplying hardware facilities to libraries to help them get accustomed to a digital environment and by expanding core software and contents for the operation of the facilities. Based on the foundation, not only catalogs produced by NLK, but also table of contents, full text image data and other various databases were provided to public libraries, offering a turning point to become hybrid-type libraries. The second phase was implemented during 2003 and 2005 to establish a national library cooperation network. This project to build a cooperation network among public libraries was completed in 2005. The network has shortened the process between acquiring and using a national collection.

4. Development and Distribution of Standard Tools

4.1 Cataloging Rules

Libraries in Korea mainly use the *Korean Cataloging Rules (KCR)* for Oriental materials and the *Anglo-American Cataloging Rules* for Western materials. The categories of Oriental books include materials written in Korean, Chinese, and Japanese.

Prior to the introduction of Western civilization in Korea, the styles and formats of Korean publications were very different from those of Western countries. Along with the formats of publications, differences in languages of the East and the West appear to have made a considerable impact on principles that base catalogs. Characteristics of the *Korean Cataloging Rules* can be considered in two timeframes: those before and after Western cataloging rules influenced them.

Analysis book-type catalogs before the influence of Western civilization in the 1930s shows that most of the Korean bibliography was classification catalogs. Within a given classification order, each entry was written below book titles and within that same category it was arranged in chronological order (Lee, Jae-chul 1976). Although codified cataloging rules are not found, the following characteristics are discovered when inferred from introductory remarks in the prefaces of catalogs and from examples of entries (Doh, Tae-hyeon 2002):

- 1) It was deemed natural to indicate book titles in bibliographic introduction in each book.
- 2) The names of compilers were indicated under each book title and additional information on them such as government positions and low-ranking government officials, was provided to enhance the understanding of the compilers.

- 3) Information on summary and review of the content of books was included.
- 4) Details on the volumes of a book were included.
- 5) By indicating the date of publication and woodblock printing, the history of a book was made known.

As seen above, the format of bibliography is as follows: book title, number of volumes, author, edition, and biographic information on the author. The history of the deceased is attached like an appendix, which may be comparable to attaching the biography of the author to the catalog.

From 1923 to 1945 catalogs influenced by Japan were produced. The *Joseon East-West Cataloging Rules* (*Joseon dongseo pyeonmok gyuchik*) produced by Bong-seok Park, which were the first cataloging rules published after 1945, were rules adopting cataloging principles with book titles used as main entry. The National Library of Korea used these rules from 1945 to 1964. Afterwards, traditional cataloging production methods disappeared under the influence of the Western civilization and cataloging rules that introduced using the author as main entry were compiled.

In 1962, influenced by the Paris Principles, the Cataloging Committee of the Korean Library Association launched a project to establish cataloging rules with the following principles:

- 1) Headings are described only in Korean.
- 2) Name of foreign authors and book titles are described in Korean transliteration.
- 3) Concerning author name heading, comma is used between the surname and the forename.

The preliminary edition of the *Korean Cataloging Rules* was produced in the same year and the first edition of the *Korean Cataloging Rules* (*KCR*) was published in 1964. The second edition, which modified the *KCR* first edition was published in 1966.

Meanwhile, since computerization of cataloging work was launched in 1980, NLK published the Korean Machine Readable Cataloging (KORMARC) Descriptive Cataloging Rules. The International Standard Bibliographic Description (ISBD) had influenced the rules. At that time, it was dominant that automated cataloging does not require the concept of main entry.

The third edition of *KCR* was published in 1983, followed by the KORMARC Descriptive Rules, a system according to which the most important identification element of a book is described first by title proper, followed by author's name. It adopted a cataloging technique to complete entry only through description. This is in line with the ISBD, yet items subject to such description were confined to books, leaving the issue of selecting headings appropriate for MARC and the issue of format as challenges to be addressed in the future (*The Korean Cataloging Rules*, 1983).

In 2004, the fourth edition of *KCR* was published by KLA. *KCR4* has characteristics that, while maintaining the description system of the *KCR3*, description items suggesting bibliographic features of data have been added to help indicate diverse types of library materials, departing from printed material-centered catalogs; and the selection and format of headings were not defined separately. Among characteristics of the *KCR4*, those that differ from *AACR* are as follows (Kim Tae-soo: 2005):

- There is, in principle, no limitation to the number of statements of responsibility (authors, etc.). In case there are more than three authors for a publication with no indication of the representative author, the previous KCRs allowed only the first author to be described in the statement of responsibility while excluding the rest, which restricted the functioning of catalogs. In order to resolve the constraint, the new rules allow all the authors specified in the work to be described in the statement of responsibility.
- In principle, the concept of main entry headings has been excluded from cataloging because 1) it was difficult to define absolute criteria for determining a main entry heading, 2) a digital catalog records only one entry for a certain bibliographic material, and more importantly 3) digital cataloging does not differentiate between the functions of main headings and those of other access points (i.e. added entry headings). In other words, a main heading needs to be understood as one of the access points in various forms. As linking techniques can associate the same access points of different forms, the rules for selection of a main heading have been excluded from the cataloging rules.

In summary, Korea's traditional catalogs included not only descriptions on book's title and compilers but also descriptions helping one to understand the history of a book by offering a summary of the book production process and preface, as well as descriptions of appendix. Furthermore, in the case of *Yemungo* (bibliography) of the *Jeungbo-Munheonbigoo*, which is the last encyclopedia of Joseon, in general there were descriptions on the background of the author: how he wrote the book, position, pseudonym, and education. In some cases there were quotations from the preface and postscript to explain additionally the content of the book. In some books the genealogies of the authors were given. In the case of *Joseon doseo haeje*, which is the Annotated Bibliography of old books of Joseon dynasty, biographic information about the authors was included. It can be assumed that such descriptions on the author did not greatly differ from elements described in authority data of today.

However, the quantitative increase in publications and the influence of Western cataloging rules made people consider the economic aspect of catalogs, resulting in the disappearance of bibliographical information, which offered a summary of the content of the book, and biographic information on the author that provided important clues about judging the content of the book. Moreover, it can be assumed that catalogers have emphasized the aspect of descriptions severely restricted to the set rules of format, rather than considering cataloging principles.

In building an authority system capitalizing on merits of the past rules, the *Korean Cataloging Rules* need to expand the functions of access point by linking personal name, corporate body name, geographic name, and subject, which are used as access point, to information sources such as dictionaries, terminology books, and biographic dictionaries. In addition, there is a need to produce cataloging rules by which catalogues are produced by utilizing external metadata on ever-increasing electronic information resources. Furthermore, it is also required to develop cataloging rules and function that can greatly improve information search for users. NLK has published the Korean translation of *FRBR (Functional Requirements for Bibliographical Records)* and is endeavoring to accommodate guidelines aimed at improving the functions of bibliographic records suggested by IFLA.

4.2 Authority File

With respect to authority files in Korea, more than 38 institutions including NLK have built approximately 2.6 million authority records (Korean library yearbook 2005). Reference for the authority file include for personal names, corporate body names, meeting names, and subjects.

However, authority files built by each library can be used only in the pertaining libraries and can not be shared on a national level. Probably many names are duplicated.

Difficulties in sharing authority files arise because from library to library different choices are made with regard to established headings for various names. Differences in data on hand among libraries cause difficulties in integrating authority. In order to solve this difficult problem, academies and libraries have recently been conducting research on ways to share authority data by equally recognizing all heterogeneous names and managing them as a name cluster.

There are not many libraries that have realized a search system in which authority files are linked with bibliographic records, and libraries usually apply authority files in which headings adopted from authority files are used as headings of bibliographic records.

Names of Korean usually take the form of one letter for surname and two letters for first name. Traditionally Koreans often created a number of names for the same person. Adult name on family registers are an official name created after a coming-of-age ceremony before which the person is called by his or her childhood name. Depending on people's preferences, some have a pen name, pseudonyms, Buddhist name and Christian name. Besides there are traditional Korean nicknames based on the city or village where they were born or the house where they lived, known as *Taekho* and *Dangho* respectively. When an adult name is registered on the family register, the person is no longer called by his or her childhood name. Due to this influence, in conducting authority filing on names of Korean ancestors, it is often difficult to decide upon one name out of many, as a person used many names and in this process pen name/byname dictionaries are very useful.

Currently, it is known that there are approximately 260 surnames in Korea and among them the five surnames of Kim, Lee, Park, Choi, and Jeong account for 54% of the total population. The concentration of these five surnames can be viewed as contributing to the increase in the numbers of different persons with the same names. Therefore, concerning the differentiation of the names of modern people, much work is required to add additional information, including names in Chinese scripts (Hanja); and even the occupations and the year of birth and death are often required in order to distinguish different people with the same names.

Meanwhile, names of foreign authors seen in translated publications published in Korea tend to be inconsistent. In this case, it is difficult to deal with various Korean phoneticizations. In the established heading of authority file, a western name is adopted in the original script. Chinese name is used in the Pin-yin system and a Japanese name is used in a revised Hebon system to transcribe Chinese and Japanese scripts. Those names are described in Korean scripts by the Hangeul spelling system as the established heading in authority file.

4.3 Classification and Indexing

In the traditional bibliography, the bibliographic system was primarily based on the order of classification; thus classification methods had been given a great deal of weight in bibliographies. The typical classification system used in Korea until before the early 20th century was the four-category classification scheme originating in China. The scheme classified data into four categories: Confucius scriptures and classics, history and biography, writings by ancient philosophers and scholars, and collections of literary works, and each category was subdivided into subcategories. The classification scheme had been employed by Cheongyeongak, one of the royal libraries during the Goryeo Dynasty during the 12th century,

Jiphyeonjeon, an academic research institute, and Gyujanggak, the Royal Library, during the Joseon Dynasty. Among them, *Seoseo seomok* of *Gyujang chongmok* published by Gyujanggak is a catalog of Korean books stored at Gyujanggak and, unlike the Four Category Classification scheme of China, subcategories reflecting characteristics of Korean books were introduced. In the modern classification scheme, introducing general and comprehensive items first and explaining specific and individual ones later, is a constructive trend that is in line with the theories and principles of modern classification schemes (Lee Jae-chul, 1976). The Four Category Classification System is continuously used in institutions such as Gyujanggak that have collections of ancient documents.

After the establishment of the first Government of the Republic of Korea in 1945, the inflow of new learning methods brought the changes of books' form and required new classification systems. The first edition of the *East-West Book Classification (Dongseo doseo bunryupyo)* was published by Bong-seok Park, who became a deputy-director of NLK in 1946. The first edition was used as a text at the National Library School operated by NLK at that time. In 1947 the *Joseon Decimal Classification (Joseon sibjin bunryupyo)* that had revised the *East-West Book Classification* received approval from KLA. Its complementary edition was published by the NLK in 1965. The *Korean Decimal Classification* by Bong-seok Park (*KDCP*) was enlarged. The *KDCP* was used from 1945 to 1983 as a classification system for national collection of NLK.

On the other hand, there was another stream in relation to *KDC*. KLA discussed a new *KDC* from 1955. The first edition of *KDC* was published and distributed in 1964. *KDC* referred to the *Dewey Decimal Classification (DDC)* to a great extent, while it was being modified to suit the situation in Korean publications. Especially, language and literature were adjacent in main classes. Concerning social science and history, *KDC* has the mnemonics along with *DDC*. Other subjects were produced in a relatively independent manner. As the latest edition, *KDC4* was published in 1996. Currently, discussion on the fifth edition is under way, mainly by the Classification Committee of KLA. Since 1984, the *KDC* has been used to promote standardization in the national bibliography but the *KDCP* is still used for the rare books in NLK.

The *DDC* was introduced when an education mission from the United States was dispatched to Yonsei University in 1957. *DDC* was adopted as a text for the classification class in professional courses that opened for leaders and staffs in the library field. Thereafter until now, the *DDC* has been applied to Western materials in many libraries. NLK assigns both *KDC* and *DDC* classification number to catalogs for the domestic publications and e-CIP data. The use of *DDC* contributes to sharing of cataloging data overseas. In relation to web resources collected by Web crawler in OASIS are automatically classified by *KDC*.

With respect to indexing, the development of subject headings has occurred in relatively recent years. NLK developed *National Library Subject Heading (NLSH)* as pilot project in 1994. The new *NLSH* began in 2002, uses an adopted thesaurus technique. Subject headings are given through *NLSH* jointly developed by NLK and OromInfo Co. Ltd. The new *NLSH* will contain 500,000 terms in 2006. Based on this system, subject headings started to be allocated to the bibliographic record for the domestic publications in 2003. Subject headings include English or Chinese scripts (Hanja). Their functions are to identify descriptors, not to respond to multilingual systems.

4.4 KORMARC

In 1976, while reviewing the feasibility of computerization, NLK decided to place the highest priority on computerization cataloging activities. Accordingly, the Library developed KORMARC (Korean Machine Readable Cataloging), which reflects characteristics of the Korean publication, an experimental format for publications in separate volumes in 1980 based on bibliographic data format suggested in the ISO 2709 with LCMARC and UKMARC as reference bibliographic data formats. This format was modified and improved in 1981 as "Standard Format." After 1982 cataloging for monographic publications was started. Thereafter, bibliographic data formats for serials, non-book materials, and rare books were successively developed; and formats for authority control and holdings were finalized and decided as national standards. The new KORMARC format draft was published on the basis of the bibliographic data format of MARC 21 in 2004. The final draft was approved as Korean Standard in 2005 and published July 2006.

Regarding the new KORMARC, this is efforts have been made to reduce the burden of data inputting of catalogers by partly reflecting features of Korean publication in the fixed length data element (008 tag) and preventing re-inputting of data that have been input once, for added entries. In particular, double inputting within bibliographic records reflects demands strongly made by catalogers at the time of developing the KORMARC format. Re-inputting is excluded as much as possible. Compared with MARC21, KORMARC has the following differences:

- In order to enable searching of publications by university and government agencies in Korea in a comprehensive manner, the Korean University Code (008/26-27) and the Korean Government Agency Code (008/38-39) were given in the fixed length data element (008 tag).
- Control number of NLK was used in 012 tag.
- *KDC* classification codes were used in 056 tag.
- In the case of multipart titles in 245 tag, subfield code \$a can be repeated and used for up to three titles of work. Repeating subfield code \$a is vary useful for making added entry automatically possible and thereby creating indexing files.
- Regarding the mixed use of Korean and Chinese characters in the title (\$a in 245 field) or the series title (\$a in 440 field), they are automatically converted into Korean in the indexing file. The converted Korean title is not created for title added entries.
- In the case of the number of non-filing characters (such as the a, an, la, des and so on) that appear in the title related tags (130, 240, 245, 440, 730, 740, etc.), MARC21 dictates to specify in the second indicator the number of characters to be excluded (0~9). On the other hand, first indicator in 245 tag of KORMARC should be written in the second indicator (printed without parenthesis) and the word to be excluded should be put in parentheses (e.g., "(The)"). When this is printed out, the parenthesis is omitted and only actual data appears.
- In tag 245, although several authors have the same role in the item, subfield code \$e will be applied for each author and use, generating added entry fields automatically.
- Subfield codes in 502 tags (thesis note) are used thesis details (\$a), thesis granting organization (\$b), department and major (\$c), and the degree-award year (\$d). Thus thesis searching was made sorting by these subfield codes, if necessary.

The National Library of Korea put a lot of effort, not only to developing the KORMARC format but also into distributing it actively. According to a survey conducted in 2004 to find the computerization status of libraries nationwide, 95% of them applied the KORMARC format in building domestic publications information databases among libraries with computerization.

By types of libraries, 98% of public libraries, 98% of university libraries and 90% of specialized libraries turned out to be applying the format, leading us to a conclusion that the application of the KORMARC is widely adopted in public and university libraries. This was the case even in specialized libraries with strong individual features, which showed 87% using that format in 1987, and there is a tendency showing that the figure is getting higher.

Concerning KORMARC, further efforts should be made to provide cross-reference tables with other metadata to facilitate the utilization of Korean bibliographic data in other sectors.

4.5 Identification System

NLK established the Korea Standard Number Center in 1990 to manage the Korean ISBN and ISSN system. Through the web site of the library, two standard numbers can be checked online. The ISBN data is referred to the library users through their OPAC as it is linked to information on the publisher of bibliographic data. The Korean ISSN bibliographic data is delivered to the ISSN International Centre.

With respect to digital contents identifiers, the Ministry of Culture and Tourism built the Content Object Identifier (COI) in 2005. COI contains information on copyrights and right-holders for cultural digital contents. Accordingly, COI will be given not only to digital resources produced by the National Library of Korea but also to all digital resources that belong to cultural contents, including publication, animation, music, films and etc. The Library was designated as a COI-registered organization and is entrusted to manage digital resources produced by the library sector.

4.6 Meta Data

NLK mainly uses DCMI Metadata description (ISO 15836) as a descriptive format for digital resources built through the OASIS. In 2003 in order to utilize bibliographic data through linkages between publication industry and libraries, the Book Trade Promotion conducted a study on modernization of publication distribution system in 2003 supported this system by NLK. In one of the projects of this study a crosswalk or “reference table” between ONIX and KORMARC was created. ONIX is adopted as a standard format in the publication industry. Bookstores and libraries can share bibliographic data using the reference table.

Metadata will provide new technological opportunities. NLK accepted to establish a metadata center in 2005. The function of the center will be to maintain the metadata registry and guide to reuse various metadata for publishers, service providers, libraries, and their users. NLK joined the DCMI affiliate program in April 2006.

5. Challenges and Conclusion

Nowadays, most libraries in Korea provide online public catalogs through their websites. Catalogs of many academic libraries and public libraries provide not only bibliographic data but also tables of contents, abstracts, original documents, and lecture resources. In particular, foreign academic journals consortia have been formed. Through the consortia, vast amounts of full-text data became available to the library users through joint purchases.

Thus far, we have examined bibliographic control in Korea. Bibliographic control refers to a wide range of activities from acquisition of library materials to facilitation of its use. The national collection has been established through the Legal Deposit System on current materials,

and the purchase of publications existing before the introduction of the legal deposit system, has been arranged. NLK exchanges publications relating to Korea with other Northeast Asian countries. For organizing materials, tools complying with international standards are developed and applied to the technical processing; and the National Bibliography is produced to facilitate international exchange of bibliographic data.

Concerning the scope of national bibliography, there is a need either to include Korea-related bibliography in the current national bibliography or to produce a separate bibliography.

With respect to authority data, there is a need to incorporate authority files that are built by various libraries to facilitate common sharing of the files on a national basis. Furthermore, linking National Archives and Records Service, museums, art galleries, and copyright management agencies is another challenge to be addressed. There is a need to promote cooperation between libraries and other institutions to facilitate active utilization of metadata, which is widely used in other areas, including the publication and distribution industry. The production and disclosure of cross-reference tables are also necessary. These tasks will require a considerable time, yet they will be addressed in a phased manner with the National Library of Korea at its forefront.

As mentioned above, bibliographic control in Korea is at a phase in which the realization of domestic bibliographic control will contribute to the realization of universal bibliographic control (UBC). The true achievement of UBC is based on bibliographic control in individual countries. Only when well nurtured bibliographic controls by each country are linked globally, will true universal bibliographic control be achieved. NLK will continue to make every endeavor to ensure that full implementation of bibliographic control for Korean information is achieved through cooperation with other libraries at home and abroad.

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