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**A Consortium Study of Academic E-books: E-books Business Models of University Libraries in Korea**

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**Abstract**

*E-books became known as one of prominent electronic resources in competitive information age. In year 2000 Korean public libraries started to serve e-books and university libraries followed them. The purpose of this study is to investigate the Korean consortium models generally and introduce how Korea Education & Research Information Service (KERIS) manages the e-book consortium effectively in the Korean perspective. There are 2 types of e-book consortium models that KERIS is handling. One is the subscription model and the other is*

*the purchasing model that consortium members make a new collection every year they share. Both sharing and purchasing options are quite cost-effective for Korean universities since they try to balance the digital and paper collection. The business model for e-books in Korean universities was quite successive and fit into conservative collection management in Korea for academic use.*

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### ***I. Introduction***

#### **Library trends in Korea**

Libraries are changing. There has been a paradigm shift in Korean libraries. The ownership of materials mostly in printed form has been replaced by the online access on the basis of shared collection. Library-centered services were changed to user-centered ones. Balancing between print and electronic materials, archiving issues are main concerns in Korea. The major problems of Korean academic libraries in subscribing online resources are shrinking budgets, increase in users' expectations and needs for new resources, fair use, archive, no standardized pricing model, and the evaluation of the effectiveness of online resources. Therefore, a consortium was requisite model for the libraries and Korea Education & Research Information Service (KERIS) has played a important role in Korea.

### ***II. Overview of KERIS and RISS***

#### **1. KERIS brief history and main activities**

KERIS was founded in January 1999 as a governmental institute under the Ministry of Education and Human Resources Development (MOEHRD). At the same time the Korea Education and Research Information Service Act enacted. Two institutions called KMEC and KRIC were consolidated into KERIS. The main targets of KMEC were elementary and secondary schools and nation's first comprehensive educational information service, "EDUNET" was launched in September 1996. KRIC was for academic sites and Nation's first service for enhancing national research competitiveness "Research Information Service System (RISS)" was launched in May 1998. In March 2001 KERIS was assigned as "National Education and Research Information Center" by the

Ministry of Information and Communication. In April 2002 KERIS designated as the national operation center for “National Education Information System (NEIS)” by the MOEHRD. Both “National Educational Resource Sharing System” and “National Digital Library Support System” were launched in 2002. In November 2003 100% of all universities and research institutes in Korea joined with RISS. From the standardization of educational materials and work process point of view, KERIS earned certification on KEM as Korean Standard for educational metadata (KS X 7001) and certified with ISO 9001 on KERIS Quality Management System in December 2004 and July 2005 respectively.

## **2. RISS background, chronology, and major tasks**

RISS is a service that provides access to source information and full texts of distinguished journal articles and dissertations both in Korea and abroad. The system contributes to world-class competitiveness in academic research. RISS is a national academic research resources comprehensive service system and 44,000 users registered to RISS in 1998 when it was first launched. As of April 2006, the system has over 840,000 registered users and the usage rate has increased tenfold over 5-year period. Looking into the individual members registered in RISS more than half of the users are graduate and undergraduate students. 10% of the users are faculty and researchers.

The main services provided by RISS are integrated search capabilities of the book collection in university libraries, a cross-referencing feature for sharing information between libraries, service for original copies of domestic theses, and overseas database services. The RISS provides research information services such as a union catalog, interlibrary loans, and dissertations in order to promote the sharing and distribution of research information. The RISS is an advanced research information service with a cooperative network among university libraries and related institutions. In detail, RISS is based on an integrated and interconnected system of individual libraries that also provide overseas academic databases through links with major overseas information services. Digital information distribution systems installed at KERIS and deployed in the proprietary systems operated by university libraries exist in universities and are interconnected to the integrated system of KERIS. Under this system, bibliographic data, information on the academic papers and original copies of academic resources are integrated through RISS and are bundled in an integrated service system that supports a nationwide service. The resources

are provided to users through a web interface that features an integrated search or simple search service, and original copies of thesis service. Material that is not compiled in the thesis database on the cross-referencing system is made available by loaning the material or photocopies.

### ***III. KERIS business models for online resources***

#### **1. KERIS consortia history of online resources**

One of major activities of RISS (Abroad) is extension of national licensing for overseas online information and promotion of joint purchases among university libraries. Also, securing full-texts of overseas dissertations, e-books, and newly issued journal articles, etc. KERIS has introduced 14 foreign databases and e-books as a national license. KERIS initiated national academic license as an effort to share the overseas databases cost-effectively. Starting from 1999 KERIS introduced 4 web databases, OCLC FirstSearch, ACM Portal, LC CDS, PRISM as a national license and expanded to 14 as of 2006. The lists are OCLC FirstSearch, ACM Portal, LC CDS & OCLC Cataloging, DDOD, PQDT, JCR, netLibrary, PML, OED, Westlaw, Scopus, LION, Education Collection, Safari. For a cooperative purchasing consortium, organizing consortium critically affects a buying power when negotiating prices and terms and conditions. At the beginning 7 consortia of total 38 universities were participated in 1999. Today KERIS organized 81 databases consortia and 143 academic libraries and governmental institute participated in national co-purchasing consortia operated by KERIS in 2005.

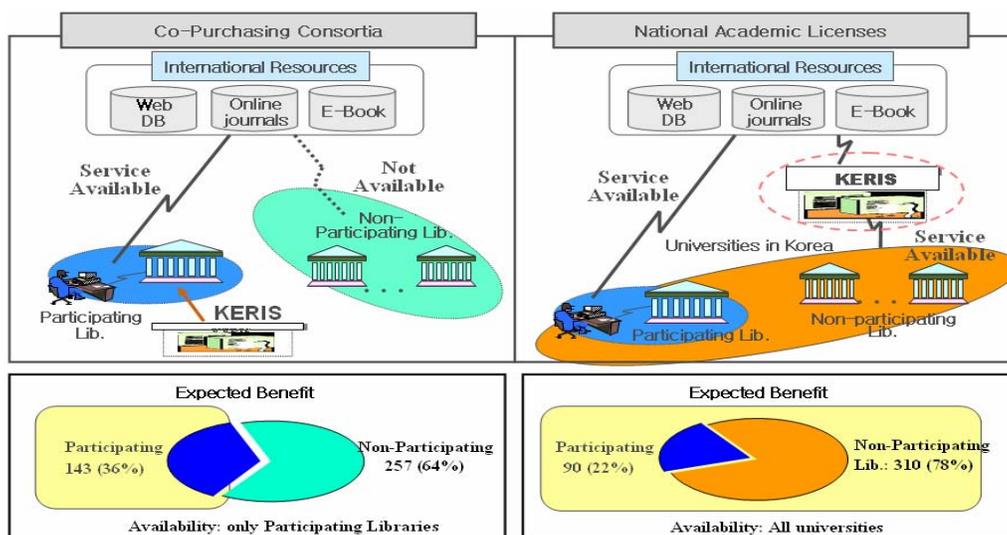
The effect of academic licenses in 2005 is estimated to US\$2.9 Billion and KERIS subsidy rate by databases varies between 30 ~ 40%. As for OCLC FS, DDOD, OED, ACM, KERIS pays 100% of total license fee to publishers. As for the rest, KERIS organizes national academic license consortia. If KERIS pays 30% of total license fee, participants pay 70% of total license fee, which these consortia are based on matching fund.

#### **2. KERIS consortia models**

##### **- National academic license versus co-purchasing consortia**

KERIS runs two different kinds of consortium models nationwide. One is a national academic license model (nationwide academic site licensing model) and the other is cooperative purchasing (co-purchasing) model. Starting from web databases consortium KERIS evolved to make e-book consortium models.

In the e-book consortium models there are subscription model and purchasing model upon the policy of publishers. Once KERIS form a consortium for a national license, KERIS and members committee judge the service quality and contents and its way to provide service to institutions. There is a committee of librarians and professors to evaluate the service and it is the formal procedure. Figure 1 shows the comparison between co-purchasing consortia and national academic licenses. The left side shows how nationwide co-purchasing consortia work as right-hand side for the national academic license. National academic license is beneficial to non-participating members as well as participating members, though the databases purchased are available only for the limited time to the non-participating members.



**Figure 1. Comparison between co-purchasing consortia and national academic licenses**

G. Edward Evans<sup>(5)</sup> suggests three concepts for the resource sharing. First, cooperative collection development, a mechanism two or more libraries agree that each one will have certain areas of “primary collection responsibility” and that they will exchange such materials with one another free of charge. Second, coordinated acquisitions, whereby two or more libraries agree to buy certain materials, and/or share the associated costs, and one or more of the members houses the material. Thirdly, joint acquisitions whereby the members place a joint order for a product or service and each member receive the product/service. KERIS national academic license model is regarded to

combine the coordinated acquisitions with/and the joint acquisitions concepts.

**- Criteria for selecting national academic licenses**

There are seven main criteria for selecting KERIS national academic license: (1)online resources in heavy demand for research, (2)online resources in high quality, (3)online resources in precedence among various subjects, (4)online resources with balanced subjects coverage, (5)online resources in good pricing condition after negotiation, (6)online resources providing best service for users under any circumstances after negotiation, (7)online resources offering national academic license model

In addition to the selection criteria, preferences to national academic license are listed in seven areas: contents, preservation, coverage, currency, efficiency, accessibility, demands/needs

**Table 1. Prior factors for national academic licenses**

Factors	In the first place	The second best
contents	full-text	index, abstract
preservation	permanent	annual access
coverage	broad subject	specific subject
currency	current issue	back issue
efficiency	increase in usage	usage rate
accessibility	non-member accessibility	member accessibility
needs	increase in members, high needs	decrease in members, high needs

**- Subsidy strategy for national academic licenses**

The subsidy policy for universities is differentiated in their full-time equivalent (FTE), usage rate of the previous year, and evaluation of KERIS resource sharing among universities. Regarding the subsidy rate KERIS announces that the rate limits between 25 ~ 30% of the total license fee for a matching-fund consortium and 50 ~ 100% rate is applied to the online resources which hold permanent ownership. Most national academic licenses KERIS handling are paid for in the matching-fund way. With a certain percent of subsidy from government funding small libraries can have benefit. Researchers in their universities can access the contents during night time when they register the

RISS or log in with RISS user authentication. Under the negotiation of national academic license price cap for minimum 3 years are needed and written in the contract and minimum subsidy from KERIS is guaranteed for renewing products. For e-book consortia, KERIS subsidized university libraries at approximately 40% of the total licensing fee.

Referring to the survey statistics in 2005, the average budget of online resources subscription for university libraries in Korea is US\$ 210,000 and one third of 4-year universities have under US\$ 50,000 budget in a year. Compared to the top universities in U.S.A. Korean libraries have a 10% of library collection and the budget increase of monographs is more or less same since year 2000. The average amount of budget of Korean university libraries is one twentieth of that of American academic libraries.

**- Group breakdown/Tier of FTEs**

There are approximately 400 university libraries in Korea and 4-year universities are about 200, but the number of libraries is decreasing owing to the mergers and takeovers of universities. In U.S.A., the established methods of pricing involve tiers of pricing based on either Carnegie classification or FTE counts at academic institutions. Referring to the Doctoral Research–Extensive in Carnegie classification universities in U.S.A. and Korea are compared. In the Doctoral Research–Extensive group, where grants doctor degree in more than 15 majors and more than 50 persons award a doctorate every year, 151 American universities ranked, but 38 Korean universities only ranked.

Following is the cases of group breakdown/tier for KERIS national academic license. In KERIS pricing models FTE is calculated with the number of graduate school enrollment and number of researchers. In 2003 the criteria has been adjusted and Group D added. Case 1 model applies to most cases and non-profit institution can be separated as Group E. Case 2 model is more detailed one for non-profit institutions. JCR consortium applies to Case 2 criterion. Case 3 is for thesis and dissertation products and universities are divided into two groups whether they grant mater and doctoral degrees. Sometimes FTEs are counted with specific major for a specific subject resource such as WestLaw.

**Table 2. Group breakdown for pricing models (Case 1)**

Group	Year 1999 ~ 2002	Year 2003 ~ 2006
Group A	master & doctor enrollment	master & doctor enrollment

	(FTE) over 1,300	(FTE) over 1,300
Group B	master & doctor enrollment (FTE) 400 ~ under 1,300	master & doctor enrollment (FTE) 500 ~ under 1,300
Group C	master & doctor enrollment (FTE) under 400	master & doctor enrollment (FTE) 100 ~ under 500
Group D	N/A	master & doctor enrollment (FTE) under 100

**Table 3. Group breakdown for pricing models (Case 2)**

Group	Year 1999 ~ 2002	Year 2003 ~ 2006
Group A	master & doctor enrollment (FTE) over 1,300	master & doctor enrollment (FTE) over 1,300
Group B	master & doctor enrollment (FTE) 400 ~ under 1,300	master & doctor enrollment (FTE) 500 ~ under 1,300
Group C	master & doctor enrollment (FTE) under 400	master & doctor enrollment (FTE) 100 ~ under 500
Group D	N/A	master & doctor enrollment (FTE) under 100
Group E	N/A	researchers (FTE) over 700
Group F	N/A	researchers 300 ~ under 700
Group G	N/A	researchers 100 ~ under 300
Group H	N/A	researchers under 100

**Table 4. Group breakdown for pricing models (Case 3)**

Group	Year 1999 ~ 2002	Year 2003 ~ 2006
Group A	master & doctor degree (4-year university)	master & doctor degree (4-year university)
Group B	master, first college degree (4-year univ.) / 2-year college	first college degree (4-year univ.) / 2-year college



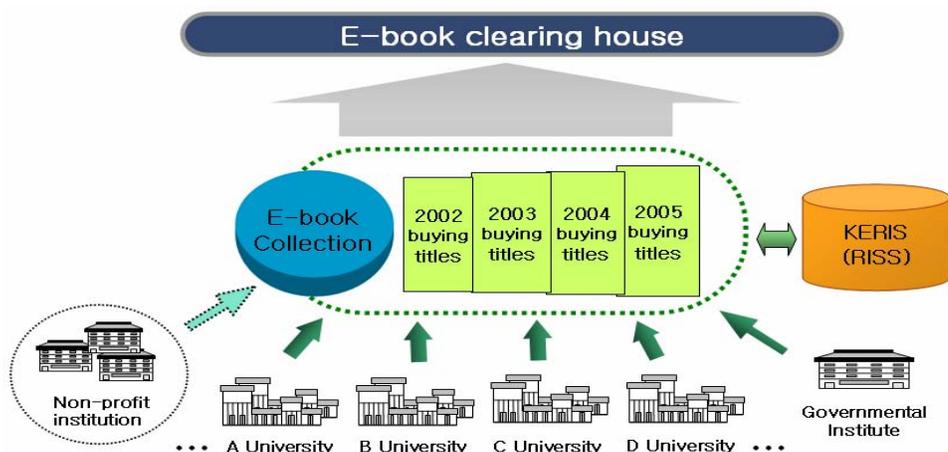
Figure 2. KERIS consortia (ACE) homepage

#### IV. KERIS electronic book (e-book) consortia

##### 1. e-book consortia background and overview

In year 2000 Korea public libraries started to serve e-books and university and school libraries followed them. Usually online resources- e-journals, web databases, manuals etc.– used to be widespread among academic libraries for research purpose. However, e-book was only known as a digital form of the paper book and opened to users through internet bookstore at first. Among university libraries e-book in English language has become predominant owing to resource sharing availability. The resource sharing network of web databases and e-journals was started in the end of nineties. Unfortunately e-books cannot be introduced in lack of standardization of technology (hardware and software). Shirley Hyatt and Lynn Silisigni Connaway<sup>(4)</sup> express that netLibrary e-books have also prompted new interest in patron-initiated acquisition models and e-book management systems would facilitate the evaluation of patron-selected approaches.

KERIS has formed e-book consortium in Korea since year 2002 at the early stage of e-book introduction. It may be the first biggest consortium in Asia-pacific region. Also, it is the first attempt to make a sharing model for web-based e-books in English language. From year 2002 to today approximately 90 universities have been participating. OCLC netLibrary e-book titles have been acquired since 2002 and four different e-book collections were made. Safari Tech Books Online was introduced in 2003. The main difference between two e-book services is subscription method, either purchasing or subscription.



**Figure 3. E-book consortium and the future expansion**

## 2. e-book consortia pros and cons

In Korea, it was estimated that duplication of the monographs in 60 ~ 70% among most academic libraries and lending and borrowing are not widespread like journal interlibrary loan service. In the library point of view, e-book (especially netLibrary e-book) consortia are efficient to libraries in access, costs, licensing and copyright, and acquisitions and resource management.

- (1) In access, consortia purchasing e-books are available for all participating libraries and sharing e-book collections are accumulated.
- (2) In costs, there is a reduction in costs associated with shelving, staffing, maintenance, and circulation.
- (3) In licensing and copyright, one-time payment and purchasing models are predominant over restrictive pricing and access models. In the meantime, access model would be preferred for a subject having a short life-span.
- (4) In acquisitions and resource management, archiving is not a concern since netLibrary e-book guarantees the preservation with a perpetual access.
- (5) In service, both ownership and remote access are allowed.

However, e-book has shortcomings as a title-based content. In the consortium point of view aggregated e-book service depends on publishers' policy and price increase cannot be estimated. More and more publishers have requested complex subscription option such as multiple copies, extra charge etc. Title selection will be a complicated issue for the consortium. In the users point of view they do not have a priority to access the shared collection, that is, users of title-holding institution do not have higher priority over users of non-holding

institutions in lending.

### **3. e-book consortia modeling process**

#### **- Basic concepts of e-book consortia**

One of e-book consortia is the purchasing model and it allows sharing of the consortia collection in a perpetual access. It is important to keep the quality of collection, minimize the duplication, and set a reasonable pricing model. The other e-book consortium is the subscription model. Owing to the subject characteristics there is a swapping feature that keeps the currency of the titles and adds popular titles. In a consortium it was not easy to swap titles, so KERIS negotiated quantity of the titles (slots) and made the same titles served at least 1 year. A study conducted at the California State University Libraries<sup>(3)</sup> suggested that the subscription model was better suited for contents or subjects with shorter shelf life, such as computer science, or business, as well as some reference works. For the purchase model, it was more desirable for works of lasting or historical value, such as disciplines in the humanities and social sciences. E-book is a title-based online resource, not packaged contents like journals, so the main consideration of consortia would be well-organized resource management.

#### **- E-book consortia models**

At initial stage, KERIS chose netLibrary for e-book consortium since it provides the same service that borrowing and lending of the print books and the co-purchasing and resource sharing among libraries. In order to set up a consortium model for netLibrary e-book, first year KERIS targeted 5,000 titles purchase including multiple copies. Before announcing the national academic license to the universities we simulated the consortium based on the number of the universities and their size of variance. Also we estimated the average cost of titles among the lists offered and basic concept was to share as many books as possible with a perpetual access (on-going access). Since one of the important issues Korean libraries face with is archive and back-files of the online resources and print cancellations, netLibrary e-book is an attractive content/service. KERIS divided university libraries into groups by their size of FTEs, especially master and doctor enrollment and charged for consortium participation. Participating members can access approximately 5,000 titles every year with the price of 50 titles and the benefit of the each university is

estimated US\$ 500,000 supposing that the average title price is US\$ 100. In 2003 consortium, reference e-books from Gale and Marcel Dekker were bought as a new trial. From 2004 consortium non-profit and governmental institute began to be a member of participants.

Referring to the mail survey conducted by 73 universities, which are the first participating members for the e-book consortium, from May to June 2003, 82% of respondents preferred perpetual access. The rest of them have a preference for the combination of perpetual access and annual access.

### - Title selection strategy of e-book consortia

KERIS developed online collection development tool (e-book title selection) together with Korean distributors for a better management and high quality of collection. It allows both librarians and end-users to access and select the titles they want and manages by subject category within the budget of each university. Main features are selecting e-book titles by searching, by subject category and alphabet lists. Both librarians and university members can access the module and select, revise, and delete the titles. Also, duplicated purchase titles are indicated and log on users view all the selected lists of titles of other universities.

The screenshot displays the OCLCnetLibrary TitleSelect web application. The interface is divided into several sections:

- Header:** OCLCnetLibrary TitleSelect logo and navigation options like '유저 등록' (User Registration) and '관리자' (Admin).
- Search/Filter Section:** Includes '선택한 주제' (Selected Subject) and '선택한 언어' (Selected Language) dropdown menus.
- Search Results:** A list of search results with columns for '제목' (Title), '출판사' (Publisher), '저자' (Author), and '가격(원)' (Price). One result is highlighted with a red box: 'American Constitution and the debate over...'. Other results include 'Compact (part 58 : Code of federal regulations...)', 'Family practice examination & board review...', 'Star-spangled Banner...', 'Advocacy', and 'Complete guide to zoning...'.
- Right Panel:** A '주제별 리스트로 선정하기' (Select by Subject List) section showing a list of subject categories and their corresponding book counts. A red box highlights the '언어학' (Linguistics) category.
- Bottom Section:** A detailed view of a selected title, including its title '(주)아이티아이', author '이진희', and a list of related titles with their prices.

Figure 4. KERIS e-book title selection module

The early strategy of title selection was intended to evaluate the selected titles through a specialized committee. In detail, every library chooses the same

amount of the titles and opens the first selected titles to all the participating members and mediates the selected collection. Finally, specialized committee members are elected in each subject from two or three universities within 15 members total and give them an authority to finalize the collection. All selected titles are bought in perpetual access (title list price x 155%) and highly used titles are added with extra budget in annual access (title list price x 115%). In netLibrary e-book case, target titles for selection limited to the ones published after year 2000 for the currency of the consortium collection.

Basic strategy for e-book selection is: (1) titles valuable for research (except for the computer manuals, practical reference works), (2) newly published titles (except for the traditional classics, old and rare books), (3) titles independent of hardware and software. The selection criteria were very specific due to the fact that money was only available for a one-off payment. The resources were therefore to be completed digital collections with a one-time purchase price and with perpetual access rights.

#### ***V. Conclusion & Suggestions***

In Korea, perpetual access and purchase model is highly recommended even though there is findings that e-book with short-term value preferred annual access and lease model. By comparing and analyzing the usage patterns between domestic (Korea) and international (U.S.A.), at early stage of acquisition of e-books in U.S.A. was one-time payment and perpetual access. Later the acquisition method has been changed in its subject, characteristics, and usage patterns. Online resources including e-book need sustainable model for continuous access due to budget deduction. Considering the life span of information we need to find the appropriate business and service models for all the resources available online. In addition, KERIS will try to make a consortia of consortia and multinational consortium.

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