

A Study on the Development of an Appropriate Purchasing Models for Electronic Books in the School Libraries

학교 도서관을 위한 전자책 구매 모델 개발에 관한 연구

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ABSTRACT

This paper is studied in order to develop the models that are appropriate for the procurement of electronic books at the school libraries. To develop the model, the following factors were reviewed: the characteristics of an electronic book, the factor analysis that affect the electronic book price, use case, environment, the role of government for the price decision model and procurement method. The models were proposed based on the above analysis and review. In addition, the proposed models reflect various opinions that the school libraries can apply.

초 록

본 논문은 초중등 학교도서관의 전자책 적정 구매 모델을 제안하기 위하여 전자책의 특성, 전자책 가격 결정에 영향을 미치는 요인 분석, 그리고 가격결정모델과 구매방법에 대한 사례조사, 환경, 정부의 역할 등을 연구하였다. 이를 기반으로 전자책 구매를 위한 적정 모델을 제안하였고, 제안된 모델의 현실적 활용을 위해 공청회, 전국교육청 학교도서관 담당자 및 전문가 등의 의견을 수렴하였다.

Keywords : electronic book, license, license management system, pricing model, purchasing model, school library
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1. Introduction

Electronic books are very important information resources in terms of digital collection in school libraries. Recently, the demands for electronic books have been continuously increasing. There are significant differences between printed books and electronic books in terms of media, delivery, usage conditions and copyright issues. For these reasons, it is still difficult to purchase, manage and use electronic books in school libraries. The absence of a price determination model and a purchasing model for electronic books make difficult the purchase of diverse digital contents and the acquirement of electronic books in school libraries.

As electronic books can be purchased using an online service or download, it is important to understand the concept of the rights and digital delivery. However, there are no exact criteria and guideline on the concept of what is proper. Most users have vague notions on the rights and copyright issues. Therefore, it has become a significant problem to decide appropriate price that satisfies the complex environment related to the procurement process of electronic books. There has been an ongoing disagreement between buyers and sellers on the pricing model for electronic books, and it has been difficult to make an agreement on how the price of electronic books can be determined in the market.

Therefore, it is necessary to make a system to activate the usage of electronic books and digital information resources in

schools and classes that will be recognized as a space for resources-based learning. There is an urgent need to create regulations and systems to protect and manage the right and intellectual properties of authors in terms of the characteristics of electronic books. In order to make the rules or regulations, a license management model must be developed in the future, which protects the intellectual properties of the authors and compensate their rights. This will allow creating an environment for the popular use of electronic books.

The purpose of this paper is to propose appropriate purchasing models for electronic books in the school libraries, so that electronic books can be easily purchased and moreover activate the library usage. This paper consists of the characteristics of electronic books, the factors that affect the price determination, the use cases at domestic and international levels, the proposed models and the conclusion.

2. Characteristics of an electronic book

In Korea, an electronic book is defined by the 'Law of Publications and Printing Promotion' as a publication that will be published or was published by a publisher, and has bibliographic information such as publisher, author, title, and date of publication etc. Its contents are recorded on electronic media, and a user can see, read or hear the contents using a computer or its related devices. We can also define electronic books in terms of content and

publisher, that is, the former is an electronic publication that is a book or a serial which are recorded contents such as characters, figures, sound, animation and moving images, the latter is an electronic publication published by a publisher reported to the government.

An electronic book is a publication that was published or will be published by a publisher, so it should be considered as same as the conventional paper book. Electronic books in Korea are mostly converted from existing paper books and will be use in the same consumer's behavior pattern as paper books. This indicates that an electronic book is a form of a paper book, and therefore, its pricing model should be based on the pricing model and distribution system of a paper book. Moreover, an electronic book should be applied transmission right if distributed in the WWW.

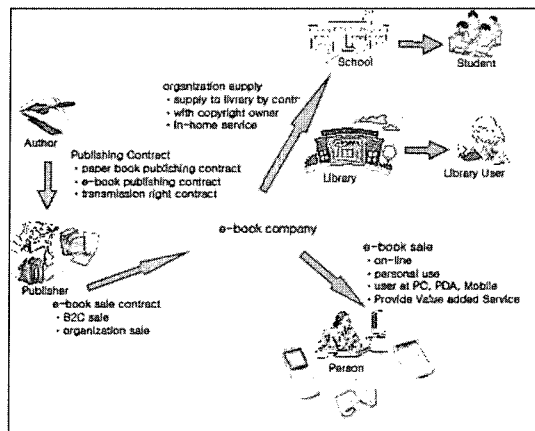
2.2 Domestic distribution type of electronic books

The distribution market of electronic books consists of author, publisher, and electronic book vendor that are in charge of production, distribution, and consumer. The electronic book market is built based on the paper book market. An electronic book vendor is contracted with an author or a publisher to make and distribute electronic books. This means that it is impossible to make and distribute electronic books without the permission of the author or publisher. Therefore, the condition of

the usage of electronic books, including coverage and price, is determined based on the author or publisher of the paper book.

An electronic vendor is in charge of making electronic books with the permission from the author and publisher. It is usually a distribution company or a separate company that distributes and sells electronic books on Internet or through mobile device such as PDA and cellular phone to a personal and organizational consumer. Authors can make a contract with a publisher on the intellectual properties including the transmission right of paper books and electronic books. A user of the electronic books has to choose from any proprietary programs such as a viewer or an administration program provided by the electronic book vendors for reading. This may cause a very serious problem for users if every vendor has their own viewers.

There are two kinds of business transaction in the electronic book market, that is, B2C and B2B. While B2C distribution is transacted by personal consumers using Internet, company's Web site, Portal, and shopping mall, B2B distribution is transacted with organizational consumers such as libraries. Therefore, B2B distribution can provide system utilities such as electronic book solutions system, software on electronic book management system and DRM (digital right management) package, and various types of value-added services to the libraries. Library users can lend, circulate, and return electronic books through the system. The following (Figure



〈Figure 2-1〉 Flow of Electronic Book Distribution

2-1) shows the distribution flow of the vendor-centered electronic book.

3. Pricing model and factors affecting the electronic book pricing

3.1 Concept of license

The license issues of the digital resources in the libraries have become a complex problem. The problems range from a simple one user license, such as CD-ROM, to a complex integrated license such as sharing digital resources which include books, journals and other digital media among many libraries.

“A license is a physical or virtual document between two or more parties that allows an intellectual resource owned by one party (the licensor), to be used by another or multiple other parties (the

licensees) for a fixed duration of time, usually for one year or more subscription period. In other words, a license is the permission given by a competent authority to engage in an activity that would otherwise be unlawful, without the presence of the license. Licensing then, is the act performed by the licensor (the vendor), giving that permission to the license (the customer, usually a library)” (Fowler 2005).

However, the types of license are increasing as the society is growing more complex and as the forms of digital information are becoming diverse. The license can be divided into an end-user agreement and a site license agreement according to the permission range of user (Fowler 2005).

The end-user agreement is one of the most general forms of license. A user is permitted to use software or a database. This indicates that a specific software has to be installed to a designated computer in the library or organization. In addition, it

is possible to install the software within a library or to limit the range of maximum number of users,

The site license agreement is diverse and complex depending on different environments. However, many university libraries and professional libraries choose this agreement. An end-user can log on process, verify their identity, and permit a license within or outside the campus or organization. Therefore, it is essential to make an agreement between the provider and user according to their own environment. If the agreement is set up, the price will be determined depending on the number of users, coverage of usage and level of services provided by the vendor. A user must have various usage limitations, such as copyright issues, interlibrary loan and installation, and follow this limitation rules. The rules are decided through a negotiation between the provider and the library.

3.2 Variables affecting the pricing model

Currently, there are many pricing models that show their own position by the electronic book vendors, publishers, and users. Through a case study on the usage, it is necessary to examine which factors are affecting the pricing model. (Table 3-1) summarizes diverse and related factors that affect the pricing model of the electronic books (Gerhard 2005). The table demonstrates that the price of electronic books can be determined by various factors

such as usage time or period, number of simultaneous users, and services types.

3.3 Pricing models of the electronic books

3.3.1 One book, one user access model

'One book, one user access model' was provided at netLibrary in OCLC. A user can lend an electronic book at a library with the same notion as to lending a paper book at a conventional library. The rented electronic book will be marked as checked-out in the library catalog, and other users will not find or access the same electronic book until the book is returned. Therefore, a library must buy several copies of an electronic book in order for the users to use the book simultaneously.

3.3.2 Multi user, simultaneous access model

This model is appropriate for most libraries. It limits the number of simultaneous users to access an electronic book. A library has to analyze the behavior of users on the use of the electronic books and decide how many users will use a particular electronic book simultaneously. As university students could not be satisfied with this service model, there are variant methods which permit access to all students within a campus. Loughborough University in U.K. uses this model for their electronic book project and controls the number of simultaneous users based on the number

〈Table 3-1〉 Factors affecting the e-book price

General price-for-value class	Expensive
	Reasonable
	Inexpensive
Clarity of firmness	Fixed ticket price
	Discounts on fixed price
	Negotiable price
Number of simultaneous users	Single user only
	Incremental numbers of users
	Site-wide license
	Consortial licenses
	State-wide license
	Multi-consortial licenses
Type of users	Based on all library users at all library in consortium
	Based on all individual campus library users
	Based on Undergraduate FTE
	Based on number of faculty
	Based on number of graduate student in a specific group on department
Location of seats	Number of workstations on single network
	In a specific building
	In a specific IP range
Amount of use	Pay per view
	Pay per time used
	Unlimited usage
Unit priced	Article
	Issue
	Journal / bundle
Timing of payments	One-time payment
	One-time cost spread over several payments
	Annual subscription payment
	Maintenance fees
Division of pricing where consortium exists	Proportional to usage, proportional to FTE, equally divided

of their users. It is obvious that the school has to make larger payments to the vendors if they permit more simultaneous users to access an electronic book. Many portal websites in Korea employed this model for their dictionary services, but the pricing method was not open to the public.

3.4 Purchasing methods of the electronic books

3.4.1 Personal purchasing type

This type carries the same concept of buying a paper book at a bookstore. The price of electronic books is determined by vendors depending on the market environments and service types. This indicates users can simply buy an electronic book they want. There can be some constraints on the license of electronic books such as the transmission and possession rights. Because the service is provided by a Web hosting in WWW, there can be more constraints such as the connection of Internet, the reading device for the electronic books and the electronic book viewer. It indicates that additional cost will be charged to read the books electronically. In Korea, the price of an electronic book is generally decided and accepted by the 40 percent level of the paper book price.

3.4.2 Library purchasing type

This purchasing type is similar to buying a paper book at a library ; libraries buy electronic books directly from vendors

when books are needed. Buying electronic journals at a library is a suitable example, and this trend spread to many schools and public libraries in Korea.

As each school library buys electronic books and provides service only to its students, the process is similar to personal purchasing type in which the price is determined by the service types and license. However, the library budget is often so limited that the library has to decide appropriate electronic books for its students and negotiate the price with vendors.

The service is also provided by the Web hosting depending on the characteristics of electronic books. There are some constraints on the service such as the proprietary program, which is used to read electronic book, the limitation on the number of simultaneous users, the reinforcement of the use at a designated place, the designated IP and the authorized users. Each electronic vendor has its own proprietary format and system. There is a trend in which a library buys electronic books from one particular vendor regardless of quality and content of the books ; if a library buys electronic books from different vendors, it has to install several different viewers and systems. This causes considerable problems such as software upgrade and technical problems to operate and maintain each electronic book system at the library. As the first priority regarding the acquisition of electronic books at a library should be the selection of high quality books, the library purchasing type will diminish in the

future if the above proprietary software and format issues are not solved.

3.4.3 Consortia unit purchasing type

Consortia unit purchasing type is generally used at a market where closely related libraries federate to buy electronic books for resource sharing. This type builds up a relatively big market and buys electronic books through the shared purchasing method. First, a library joined consortium will select its own contents, then, this information is integrated, and finally, the consortium makes a buying decision. The price is negotiated between the vendor and consortium depending on the number of simultaneous users, the range of authorization users, and the range of IP. However, there are no existing principles, guidelines or criteria on electronic pricing model ; the vendors propose their own price which includes profit, and negotiate final price with the buyer.

As an example of consortia unit purchasing type, KERIS (Korea Education and Research Information Service) promoted a project to activate the usage of electronic books based on DLS (Digital Library System) on behalf of local offices of education. The selection process was as follows: vendors suggested their prices for electronic books, and KERIS selected the electronic books based on the evaluation criteria of the contents. The vendors which owned the selected electronic books negotiated the price with KERIS, and then a tripartite contract was made among

KERIS, the selected vendor and the local office of education.

Nevertheless, as there is no pricing model or criteria on service and license, it is very difficult to negotiate on a price and service conditions when there are disagreements on price and service type between KERIS and vendor.

3.4.4 National unit purchasing type

This purchasing type is similar to the consortia unit purchasing type, but the scope of consortia can be enlarged to the national level reflecting the characteristics of this current network society. The subscription and purchase of foreign electronic journals and databases is applied in this type. The price decision and service type is determined directly with the foreign vendors or publishers. As the foreign electronic book and journal distributors have their own criteria or guidelines on the usage conditions and license among nations, it is easy to agree on the price and contract conditions. While this purchasing type has many advantages such as solving duplication problem of purchasing process, enhancing purchasing power, and minimizing of resources duplication, it is difficult to organize and maintain an agency that has a strong decision power and that reflects the diversity of each library and local region.

Currently, foreign electronic resources are bought by KERIS using this purchasing type. While the participating university libraries pay their share depending on the number of users, KERIS also supports a

portion of the cost with the national budget. This is a type of a matching fund to share electronic resources among participating universities in Korea with limited budget. KERIS case does not match the electronic books in our research target in terms of target resources such as scientific journals, dissertations and databases that are published in foreign countries, but the national unit purchasing type will be a proper model for electronic books in the future if the licensing model is developed.

4. Use cases

4.1 Use cases at abroad

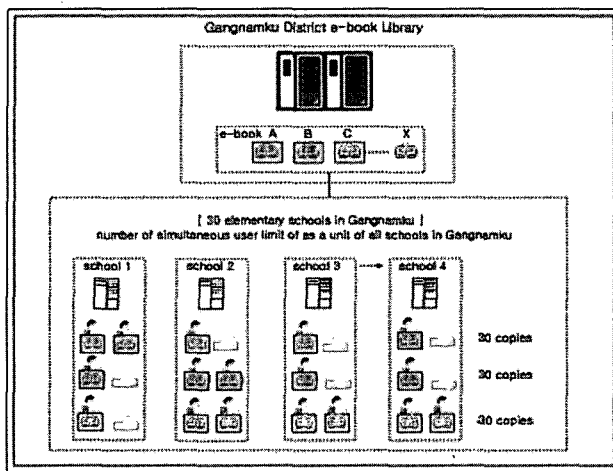
Electronic resources sharing in the United States is more than 10 times larger than in Korea in terms of the average holdings of university libraries and the current status of resources sharing activities. Web services of electronic resources have been continuously increasing such as electronic journals and databases in the libraries. In order to adapt a new web-based infrastructure which enables remote access and Internet usage, a variety of web services of the electronic resources has continuously been developed. For example, libraries at University of California in Berkeley, Stanford University, and Columbia University provide their own electronic book services.

Both domestically and internationally, electronic journal services are used more

than electronic book services. The pricing model of electronic journals is closely related to electronic books. Publishers have their own pricing models which include various options such as the print option, the table of contents option, and the only access option to read and print. However, most of publishers permit only reading as a free of charge.

Rusch-Feja proposed a pricing and licensing model for electronic resources including the electronic books (Rusch-Feja, 2005). He suggested a model that categorizes electronic resources into electronic journals, electronic books and database, and that participates publishers, vendors, information providers and information users. The price decision is based on a single book, a single user method, the number of potential users, the number of simultaneous users, the unlimited use of monthly or annual fee base, and the purchasing copyright of the electronic resources.

One good example of a license model is the Council on Library and Information Resources Digital Library Federation Model License in the United States. As all of the pricing models were developed by each publisher's own policies, these models do not suit the situation in Korea. Moreover, they are vendor-driven models. Therefore, there is a need for a pricing model in which vendors, libraries, lawyers and license-related persons are inclusively participating.



〈Figure 4-1〉 Service flow diagram of Gangnam-gu District

4.2 Use cases at domestic

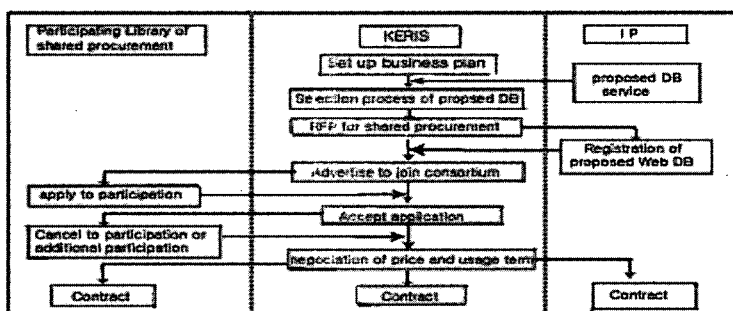
4.2.1 There are three use cases at domestic, that is, electronic library in the local district of Gangnam-Gu in Seoul, purchasing use case of each school, and purchasing use case at the nation level.

The electronic library developed in Gangnam-Gu is a successful example of consortia unit purchasing type. The library is used for elementary school students in Gangnam-Gu, and the district office purchases service electronic books jointly with the school libraries.

The office purchases at least one copy of an electronic book per one school. If an electronic book is reserved by many users, extra copies of the book are purchased. Currently, the library maintains minimum 30 copies for an electronic book. The following 〈Figure 4-1〉 shows a diagram of

service flow. The Gangnam-Gu local district office is a slightly different unit from a local education office, but it is a successful model that uses the consortia purchasing type.

Many school libraries in Korea did not have sufficient budget to purchase electronic books until 2000. However, the Korean government initiated a recommendation of purchasing electronic books to adapt a new education environment in this age of network society, and consequently, many school began to buy electronic books. Only a few number of schools had purchasing experiences. If its budget allocated to buy electronic books, a school had to choose the contents and a vendor that provides the selected contents. During the selection process of electronic books and vendors, serious issues arose on who are involved in the process. For example, school librarians and teachers did not attend in selecting process because of



〈Figure 4-2〉 Shared procurement procedure of KERIS

organization structure in schools.

The purchasing type is a library purchasing type, and the range of the number of usage for electronic books is limited to all the students within the schools. Every student has their own ID and password to access the electronic books so that each can use or read the electronic books anywhere as long as one has his or her ID. Although the Korean government has recommended school libraries buying electronic books, most librarians do not favor buying electronic books at the school level. They prefer using DLS system of KERIS.

KERIS consortium provided a good use case of sharing and purchasing foreign electronic resources. KERIS manages the consortium to share the cost and usage of foreign electronic resources at the national level. It is also in charge of negotiating the usage condition with vendors in order to distribute scientific information in Korea. The main reason why KERIS is instigating these activities is to make the distribution framework of foreign resources efficient, so that the cost reduction, minimization of

duplication process, maximization of resources sharing and saving national budget may be possible. The following 〈Figure 4-2〉 demonstrates the KERIS use case of the procedure to purchase foreign electronic resources.

In addition, 〈Table 4-2〉 shows the currently available foreign electronic resources lists at KERIS. The resources are purchased from OCLC netLibrary. The service contract is made with KERIS and OCLC, while the operation contract is made between KERIS and OCLC Korea agent. Any university, college and research institution in Korea can be a member of KERIS consortium if they want. The cost is shared by four different levels (A, B, C, D), and these levels are determined by the number of graduate students of a university or a college. KERIS also supports a portion of the cost.

This use case is to distribute foreign electronic resources at the national level. KERIS is in charge of contracts and negotiations representing the nation of Korea as well as participating universities and research institutes that share the cost.

〈Table 4-2〉 Current status of the national license of electronic resources at KERIS

Service	Subjects	Starting date	Service	Subjects	Starting date
OCLC FirstSearch	All subjects Area bibliography	1997	OCLC netLibrary	Foreign e-Book	2002
OCLC PRISMLC CDS	Foreign utilities (catalog download)	1997	JCR Web	Evaluation information of Journals	2002
ACM Portal	Computer Engineering E-journal full text	1997	ERIC EDRS E'Subscribe	Full text e-journal of education and its related areas	2002
DDOD	Foreign ph.D Dissertation full text	2000	Safari Tech Books Online	Full-text e-journal of IT and its related areas	2003
PQDD	Dissertation bibliography and full text	2001	Westlaw	Foreign full text information of law	2003

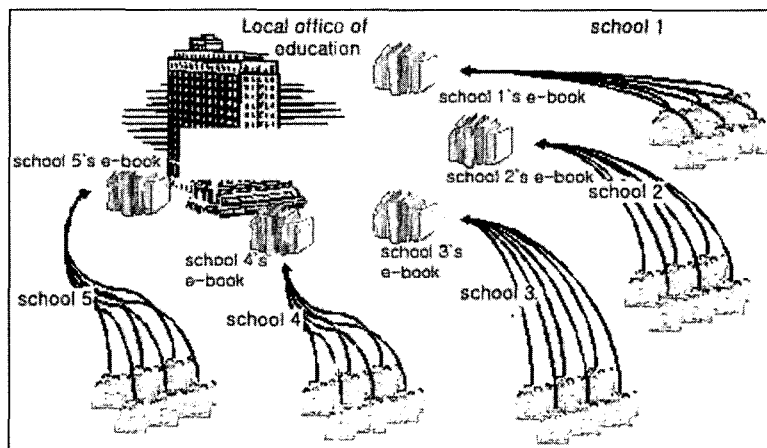
5. Proposed purchasing models of electronic books

Essentially, the electronic book price depends on the market situation. It indicates that every seller and buyer will negotiate the price of electronic books depending on his or her own conditions. This is ideal if the electronic book market is matured. Unfortunately, the electronic book market in Korea is only at its beginning stage. Therefore, the Korean government has a responsibility to activate and mature the market.

In this study, we propose two purchasing models including the pricing model of electronic books in Korea. These models can be used in each school library or consortium unit to purchase electronic books.

5.1 Purchasing model at each school

Each school has to buy their own electronic books at the market where the purchasing method and the price decision are negotiated between the vendors and each school. This is the most reasonable model in Korea but has substantial problems such as vendor's proprietary electronic book format, software and system. Besides, the publishing industry in Korea is mostly composed of small or medium-sized entrepreneurs in terms of their revenues and sales volumes. This indicates that the electronic book vendors do not have sufficient funds to create high-quality electronic books and system. If each school has its own system to load the electronic books and service to students, it will be required to assign the maintenance cost from its budget and will need its own



〈Figure 5-1〉 Purchasing model of school unit

system experts. This can be an obstacle to active use of electronic books in the school libraries.

Shown in 〈Figure 5-1〉 is the purchasing model and system management at each school. Each school selects its own electronic books and makes a contract with a vendor who owns the selected books. Purchased electronic books are maintained and serviced at DLS, which was developed by KERIS, in order to manage the electronic resources at a centralized local office of education in the local government. This indicates that any hardware, software and contents are managed by a shared model.

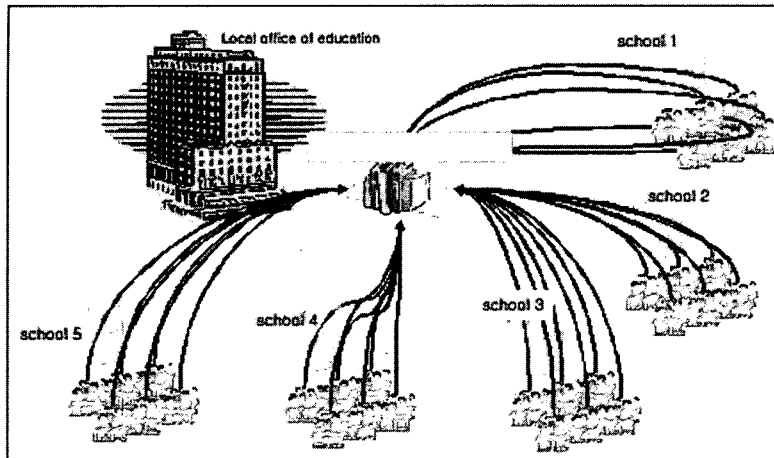
The price for electronic books will be decided by the number of students at each elementary, middle and high school. However, it is difficult to decide the number of simultaneous users. Therefore, each school library should develop a model which the number of simultaneous users are determined by the number of students

and classes when buying electronic books using this method. There are numerous factors that affect the price decision such as the number of classes and students, budget size, regional characteristics, and policies of each school. As there are no existing standard to decide the price depending on the factors, most schools follow the purchasing principle of paper books.

Therefore, the decision on price and usage conditions is generally left to each school and vendors. But this method will diminish the electronic book industry if each school discontinues purchasing electronic books.

5.2 Shared purchasing model in the Office of Education in local governments

This is a shared purchasing model, that



〈Figure 5-2〉 Shared purchasing model of the office of education

is, the Office of Education of local governments purchases electronic books on behalf of each school belonging to the local government. In 〈Figure 5-2〉 is shown the diagram of this model. The contents of the electronic books bought by the Office of Education are loaded to DLS in the office, and any school can access the books through DLS.

Copyright issues should be considered with the highest priority when consortium buys electronic books through the shared purchasing model. When the Office of Education purchases electronic books, the purchasing transaction is considered as a substitution of each school buying the electronic books. The shared purchasing model could be considered as an agreement of violating the permission of comprehensive usage if the vendors or the copyright owners receive unbalanced compensation for their right. Therefore, the shared purchasing by Office of Education must

compensate at the same level of purchasing electronic books by each individual school. This means that the compensation principle needs to be established based on the pricing and purchasing of each school library. The copyright law in Korea prohibits the transmission of electronic resources between libraries, excluding non-commercial books and books that are older than 5 years since publishing. Other kinds of books must receive a special permission of transmission right by the law.

Therefore, the shared purchasing model in the Office of Education has two different approaches according to the interpretation of the number of simultaneous users.

The first approach is a principle in which the number of simultaneous users is interpreted as being one copy of a book per school. If a local government has 50 elementary schools in its local district, the Office of Education have to buy 50 copies

of a particular electronic book. The number of simultaneous users can be calculated assuming that every school in a local government should purchase one copy of an electronic book. This approach is ideal for the growth of the electronic book industry and the activation of the electronic book market. However, there are some limitations such as the considerable use of national budget. Diverse approaches of the users to the electronic books can be satisfied with limited budget of each Office of Education and can minimize the number of unused copies.

The second is a principle in which the number of simultaneous users is developed at a minimized level. When a vendor proposes a price for an electronic book including profit, the Office of Education in the local government negotiates an apt price within the range of its budget. Then the Office of Education proposes an appropriate price that assumes the number of minimum simultaneous users and guarantees profit for vendors. This approach is beneficial for the Office of Education in terms of the efficient use of the budget. However, as the number of simultaneous users and the profit of the vendors decrease, this principle will soon become un-welcomed at the market. Moreover, the electronic book industry and market may eventually diminish with this method. The important issue is the question of developing an appropriate number of simultaneous users according to the local environment. As there are no price principles that guarantee profit for vendors

and that satisfy the efficient use of national budget in the Office of Education, more studies on these issues are necessary.

5.3 Comparison of the two models

Two purchasing models have been proposed in this study. They are similar in terms of the maintenance and services of electronic books ; however, there are significant difference in applying the number of simultaneous users and purchasing process. These models show the differences in terms of purchasing type, number of simultaneous users, unit price of an electronic book, scope of simultaneous users and total price. The former is highly recommended, that is, the purchasing model by each school. This model is recommended because of the role of the government in the electronic book industry, the viewpoints of copyright owners and publishers, and the opinions of buyers and sellers. The government's role in the industry of electronic books and publication is substantially significant in Korea, where the publishing industry is relatively small in size and the electronic book industry is still at its beginning stage. Therefore, the government has to support activities involving the technology development related to the electronic books, the development of standards, and the development of policy for activating the use of electronic books.

The shared purchasing model has two approaches, the one copy per school principle and the minimized number of

simultaneous user principle. One copy per school principle is easy to apply in the Office of Education at local governments, but the decision of minimum number of simultaneous users is a complex issue in the market.

The minimum number of simultaneous user principle from the shared purchasing method can also be used if the licensing model is developed. As the development requires additional time, it will be more appropriate for medium and long term time range.

6. Conclusion

It is predicted that the pricing model and the purchasing method will eventually leave the market. However, as mentioned earlier, the electronic book market in Korea is still at its beginning stage. Therefore, it is crucially necessary to have the industry protected by the government until the market matures.

This study draws two purchasing models in terms of the use cases of pricing models and purchasing methods, the electronic book industry environment in the domestic and abroad, and the role of the government. It cannot be easily concluded that these purchasing methods proposed in this paper are the best answers. Rather, these methods are proposed to initiate and resume the electronic book market for school libraries. Eventually, the final decision on which method is to be reinforced will be made by a policy decision maker in

the government.

It is very important to review the government policy on the electronic book industry when the government makes a decision. The policy decision makers must consider the case of 'Napsterization' in the online music industry and the general music industry, reflecting on how this will influence the publishing industry and the electronic book industry in Korea. The publishing industry is crucial in its cultural power of a nation. The publishing industry and the electronic book industry act as an intermediary between authors who create knowledge and information and consumers who are the cutting edges to reach a strong nation of culture and knowledge. If these industries are continuously activated and developed, the cultural power of a nation will grow and advance. This is the reason why many nations are beginning to legislate and protect the copyright and creativity in this age of networked-knowledge societies to enhance the productivity of authors and artists.

This paper presents a short term solution on the pricing and purchasing method for electronic books. Subsequent researches are necessary that pursue the enhancement of the accessibility on electronic books for student and people and the efficient use of budget through shared purchasing. First, a license management system should be developed on the basis of this study. As the concept of electronic books should be changed from that of possession to that of usage, the development of an appropriate usage model reflecting this change is

essential. Secondly, the technology related to the electronic book needs to develop in order to activate the use of electronic books. User-centered technologies such as semantic navigation and search, user-friendly interface, ontology, and semantic web service will be developed in the near future. Lastly, a national-level research on the policy of electronic books is essentially required.

We live in the age of culture. Technology paradigm is moving from ICT (Information and Communication Technology) to CT (Culture Technology). The culture, cultural contents and culture technology will determine the quality of life in the future. Electronic books will play a central role in the changing environment of culture, information and knowledge.

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