From CALIS and CASHL to the Library Consortium Trend in China

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Abstract:

Purpose – This paper aims to provide suggestions and predictions on library consortium development trend in China under new circumstances through the enlightenments summarized from CALIS and CASHL.

Design/methodology/approach – By an overview and comparative analyses of the similar and different consortium characteristics of CALIS and CASHL – two most influential library consortia in China, mainly on sources of funds, organizational management, cooperative collection development, collection character, resource sharing and services etc., this paper summarizes their main consortium advantages and disadvantages to gain valuable enlightenments.

Findings – Seven points of advantages and tree points of disadvantages on consortium in CALIS and CASHL are summarized; and by the enlightenments gain from CALIS and CASHL, suggestions and predictions on library consortium trend in China are as follows: the cost-saving and high effective models in CALIS and CASHL will be promoted, the uniformity and standardization construction will earn more respect and be realized, library consortia will develop to the digital library direction, the consortium scope will be broadened, different library consortia will move toward integration.

Originality/value – The comparative analysis of CALIS and CASHL on their consortium characteristics is original. The summary of their main consortium advantages and disadvantages, together with the suggestions and predictions of this paper to library consortium trend in China provide useful references for researchers, the public and decision-makers in China as well as other countries on library consortium experiences, improving and developing directions.

Keywords   CALIS, CASHL, library consortium, trend

Paper type   General review

1. Introduction

By the historical perspective, library consortium is not new, which has a history of over one hundred years in the United States, and about three decades in China. Library consortium refers to co-operation, co-ordination and collaboration between, and amongst libraries for the purpose of sharing information resources (Nfila and Darko-Ampem, 2002, p.203), or refers to an association of libraries established by formal agreement, usually for the purpose of improving services and mutual benefits through resource sharing among its members (Dong *et al.*, 2009, p.1; Bostick, 2001, p.6). The main causations for co-operation are the information explosion, the increasing cost of publications, stringent budget allocations, and the increasing demand for improving service from users. Under recent global financial crisis, facing substantial budget cuts, the situations for libraries to undertake all the problems alone are getting much harder and more expensive. As a major way of sharing and improving resources and reducing cost, library consortium causes more and more concern in the world, and it's the similar situation in China.

Library consortium emerged in the 1980s in China. Though the history is not as long as in the United States, library consortia in China developed quickly. According

to Dong *et al* (2009), large-scale regional consortia among Chinese academic libraries was achieved in the 1990s, cross-regional consortia and national consortia began to gain popularity after 2000. Among them, CALIS (China Academic Library and Information System) and CASHL (China Academic Humanities and Social Sciences Library) are two most influential and successful nationwide academic library consortium projects in China. Founded by the Ministry of Education with different special government funds, these two library consortium projects lead in many creative ways the construction of a national information network，and both play important multiple resource-sharing roles among the participating academic libraries in China. Besides, they both are closely connected and have similar consortium characteristics and advantages. At the same time, either of them has it's own characteristics, advantages and disadvantages too. In the following part, this paper tries to provide information and study on China's significant library consortia by making an introduction and analyses of CALIS and CASHL. Besides providing an overview of these two typical consortia, this paper tries to summarize their main advantages and disadvantages by comparatively analyzing their similar and different consortium characteristics. Moreover, on the basis of the enlightenment provided by these two consortia, this paper also tries to put forward suggestions and predictions on the development trend of library consortia in China under new circumstances.

2. An Overview of CALIS & CASHL Consortia

CALIS is the abbreviation of China Academic Library and Information System, which is a national academic library consortium established in 1998 funded primarily by the Chinese government and under the leadership of Ministry of Education. As one of the two public service systems in "Project 211", in China's ninth five-year plan, the mission of CALIS is to promote and improve resource sharing among academic libraries, reduce the expenses for participating libraries, and support the development of higher education in China. It is intended to build an infrastructure for resource-sharing and to serve multiple resource-sharing functions among the participating libraries. Its long-term goal is to build the largest academic digital library in China, and to construct, integrate, preserve, and distribute digital resources to all the universities and colleges in China (CALIS Introduction, 2009). Currently it has over 600 member libraries distributed in twenty-seven provinces, cities, and autonomous regions in China (Dong et al., 2009).

CASHL is the abbreviation of China Academic Humanities and Social Sciences Library, which is a national academic library consortium established in 2003 under the leadership of Chinese Ministry of Education. As one of the key projects of the Ministry of Education's "philosophy and social sciences prosperity plan", the mission of CASHL is to cooperatively acquire, preserve and share foreign and Chinese periodical resources in the humanities and social sciences among member libraries, and to provide a unified online portal for users to retrieve and utilize these resources. The ultimate goal of CASHL is to become the "National Philosophy and Social Science Resources Platform". CASHL is affiliated with CALIS which provides data processing standard and technical support to CASHL. Currently CASHL is the only

national foreign literature information system in humanities and social sciences and has 500 member libraries in China (CASHL Project Survey, 2009).

3. Comparative Analyses of CALIS & CASHL Consortia

CALIS and CASHL are two closely connected consortia that have similar and different consortium characteristics. By making analysis and comparison of their similar and different consortium characteristics mainly on sources of funds, organizational model, management model, cooperative collection development model, collection character, resource sharing and services etc., this paper tries to find out the advantages and disadvantages of these two consortia.

3.1 Similar Consortium Characteristics Analysis

The similar consortium characteristics of CALIS and CASHL are shown in Table 1 (CALIS, 2009; CASHL, 2009):

Table 1. Similar Consortium Characteristics Comparison

Consortium Comparative Category	CALIS	CASHL
Organizer	Chinese Ministry of Education	Chinese Ministry of Education
Sources of Funds	Chinese Ministry of Education & Central Members	Chinese Ministry of Education & Central Members
Organizational Model	National & Intra-system Consortium	National & Intra-system Consortium
Management Model	Virtual + Realistic Management	Virtual + Realistic Management
Cooperative Collection Development Model	Existing Collection Resource Cooperation & Coordinated Purchasing Cooperation	Existing Collection Resource Cooperation & Coordinated Purchasing Division
Sharing And Service System	Three-tier Structure System	Three-tier Structure System
Consortium Function Type	Multifunction Consortium	Multifunction Consortium
Serving Objects	National University Teachers and Students	National University Teachers and Students

According to Table 1, the similar consortium characteristics analysis of CALIS and CASHL are made as follows (CALIS, 2009; CASHL, 2009):

(1) These two consortia share identical organizer and identical serving objects. They both are organized by Chinese Ministry of Education. The unified leadership of Chinese Ministry of Education is strong and authoritative, which ensure the formation and development of the two consortia much easier and faster. And the main serving objects of both consortia are university teachers and students all over China. Meanwhile, in organizational model, either CALIS or CASHL is national and intra-system consortium, which is cooperation whithin academic

libaries of universities and colleges over the country.

(2) The sources of funds of these two consortia are also similar, both are from different special funds of Chinese Ministry of Education and different matching funds of their central members. For CALIS, the Central Government invested 60 million RMB initially, each regional center member provides at least the same amount of money to match the government's support. (Dong et al., 2009, p.5) For CASHL, Chinese Ministry of Education invested 80 million RMB initially on the basis of the Central Government investment (Zhang, 2004，p.11), and the matching funds of the central members and CASHL project funds exceed the ratio of 1:1. (CASHL Management Center, 2005).

(3) In management model, both CALIS and CASHL take a combination of virtual and realistic management. Either of them has national management center in Beijing, which is virtual and do not has any department to collect literature or to provide service. The national management center only has an office that is responsible for the central administration, unified planning and management of literature resource sharing and cooperative collection development among member libraries, such as allocating and managing the use of funds, organizing and coordinating purchasing, setting standards and norms on union catalog and services (Yang, 2008, p.63). And every central member and regional member has a division and cooperation with each other to conduct the realistic management on its own part.

(4) Generally, the cooperative collection development model of CALIS has similar points with CASHL too. Both CALIS and CASHL achieve collection development cooperation by promoting the cooperation of existing collection resources and co-construction of collection resources among members, and mainly by union cataloging, union developing databases and purchasing cooperation. CALIS' Union Cataloging System develops very fast and successful. It is the largest and first multi-language cooperative online cataloging system in China that has more than 600 member libraries joining the union cataloging. By the end of 2006, the union catalog database accumulated over 2 million bibliographic records of various types of materials in several languages (Zou and Dong, 2007). Besides, CALIS has organized group purchasing of foreign databases for libraries and institutions to reduce costs and enlarge the beneficiary. Coordinated purchase of databases is a key function of CALIS in which CALIS is able to negotiate for databases on behalf of member libraries. Many member libraries has taken part in obtaining more substantial discounts (Yao et al., 2004, p. 279). By the end of April 2005, CALIS had facilitated 62 group purchasing activities which involved more than 790 academic libraries and institutions in China, resulting in the purchase of 216 foreign databases (Yao and Chen, 2005, p. 473). CALIS has also put great efforts into sponsoring and coordinating the creation of local special digital collections. The newly launched CALIS Digital Resource Portal integrates about 260 foreign and Chinese digital resources, including abstract and index databases, e-books, OPACs, newspapers, dissertations, e-journals, and search

engines. The portal is currently on trial and more digital resources will be added to the system in the future ((Dong et al., 2009). For CASHL, the"overall collection development" and "coordinated purchasing division" feature its cooperative collection development model. As a unique national foreign periodical resource security system for humanities and social sciences, CASHL plans to purchase a total of 12000 kinds of core journals and key journals in humanities and social sciences, and has made a coordinated purchasing division by disciplines to each center library (CASHL Project Survey, 2009). According to this general plan, the purchasing division and each center's collection development policy, each regional center and discipline center of CASHL submit their booking journal list to the national centers to check duplicates. If there are duplicates, the national centers will coordinate distribution to avoid duplication and blind subscription (Shen et al., 2008; Li, 2005, p.47). Besides, each center library of CASHL provides its own holdings data of foreign publications on humanities and social sciences to build union catalog and union databases (CASHL Center Introduction, 2009). In this way, CASHL now owns a foreign periodial contents database, a foreign book union catalog database and several other databases.

(5) The sharing and service system of CALIS and CASHL is similar too. They both share resource and provide services such as inter-library loan and document delivery services through a Three-tier Structure system. This structure typically has three tiers consists of national centers, regional centers, and local centers and libraries as end-users （Zou and Dong，2007）. For CALIS, its first tier includes 4 national centers that provide information at a national level. Its second tier includes 8 regional centers and 15 povincial centers. Its third tier includes above 500 member libraries (CALIS Service System, 2009). For CASHL, its first tier includes 2 national centers. Its second tier includes 5 regional centers and 10 discipline centers. Its third tier includes above 400 member libraries (CASHL Center Introduction, 2009). Both Three-tier Structure systems operate and function in the similar way. The first tier centers of both consortia are responsible for management and coordination of the overall resource sharing activities and services inside each consortium. The second tier centers, besides supervising and providing services to the third-tier members, also coordinates with national centers and other centers of the same tier, and function as a "hub" to negotiate, customize and deliver services (Dong et al., 2009, p.5).

(6) The consortium function type of CALIS and CASHL is similar too. They both belong to multifunction consortium instead of single-function consortium. And they have similar consortium functions. Both CALIS and CASHL have the consortium functions that cover cooperative collection resource development and coordinated purchasing of electronic resources, union catalog and union developing databases, collected resource sharing, document delivery service, cooperative online consulting service, and personnel training etc.

3.2 Different Consortium Characteristics Analysis

The different consortium characteristics of CALIS and CASHL are shown in Table 2 (CALIS, 2009; CASHL, 2009):

Table 2:Main Different Consortium Characteristics Comparison

Consortium Comparative Category	CALIS	CASHL
Alliance Development Goals	China Academic Digital Library and Information System	National Philosophy and Social Science Resources Platform
Collection Character	Wide range of disciplines	Focus on humanities and social sciences
Service Model in ILL & DD	Distributed Service Model	Centralized Service Model

From Table 2, the main different consortium characteristics analyses of CALIS and CASHL are made as follows (CALIS, 2009; CASHL, 2009):

(1) The alliance development goals of CALIS and CASHL are different. CALIS aims to become China Academic Digital Library and Information System. Its long-term goal is to build the largest academic digital library in China, and to construct, integrate, preserve, and distribute digital resources to all the universities and colleges in China. The ultimate goal of CASHL is to become the "National Philosophy and Social Science Resources Platform". The mission of CASHL is to cooperatively acquire, preserve and share foreign and Chinese periodical resources in the humanities and social sciences among member libraries, and to provide a unified online portal for users to retrieve and utilize these resources.

(2) The collection character of CALIS and CASHL are different too because of their different development goals. The collection resources of CALIS cover a wide range of disciplines, which include the collection information of all the member libraries of "Project 211" Universities and the imported electronic resources by coordinated purchasing. Currently, the existing resources of CALIS mainly include union catalogue database, the imported databases, current Chinese periodicals database, current western periodicals database, dissertation abstracts database, special discipline and special subject databases, key discipline navigation databases and electronic resource navigation databases (CALIS, 2009). Differently, the collection resources of CASHL focus on humanities and social sciences according to its different development goals. Currently, CASHL has collected more than 9000 kinds of foreign core journals and key journals on humanities and social sciences, above 1000 electronic journals, 250000 kinds of early electronic books, nearly 400000 kinds of foreign books, "University Foreign Periodials of Humanities and Social Sciences Contents Database", "University Foreign Books of Humanities and Social Sciences Union Catalog" database and several other databases (CASHL Project Survey, 2009).

(3) The main service model of CALIS and CASHL in interlibrary loan (ILL) and

document delivery (DD) are different too. CALIS adopts the "Distributed Service Model", while CASHL takes the "Centralized Service Model" in DD service. The "Distributed Service Model" in DD refers to take regional libraries or document supply centers as resource collection and service units, and together constitute the document delivery network. Within the network, any member library can apply and obtain the necessary documentation from any other member library, and also has an obligation to provide document delivery service to other member libraries at the same time. The "Centralized Service Model" in DD means that a national library or document supply center provide centralized literature security service. The user or user library can register and apply document delivery directly in the DD service system of the serving center, and the serving center provides documents to users directly from its own collection or those obtained from other libraries (Li, 2004).

4. The Main Consortium Advantages and Disadvantages of CALIS and CASHL

4.1 The Main Advantages of CALIS and CASHL in Consortium

The main advantages of CALIS and CASHL in consortium can be summerized as follows:

(1) Authoritative and unified leadership combined with intra-system consortium model:

Both CALIS and CASHL are organized by Chinese Ministry of Education. Government's direct supports and organization to these two consortia provide authoritative and unified leadership, which ensure the formation, management and development of these two consortia much easier and faster. Besides, these two consortia belong to intra-system consortium model. Since all the member libraries of the two consortia belong to higher educational system, and the Chinese Ministry of Education is their superior leader, so it's much easier to manage, coordinate and is suited to china's national conditions (Gao, 2002).

(2) Government's special funds combined with members' matching funds:

The financial resources of these two consortia mainly come from two aspects: the government's special funds combined with different matching funds of their central members. In this way, the central members of the two consortia not only enjoy their rights, but also has an obligation to their own consortium, which both mobilized the enthusiasm of the central members, and solve the problem of insufficient government funding (Liu, 2006, p.8). Moreover, this model can ensure more continuous financial support, which is a necessary condition for sustainable development of consortium.

(3) A combination of virtual and realistic management model:

The virtual plus realistic model can effectively utilize the original collections and human resources of the member units, reduce operating costs and save funding. This management system not only can maintain the member unit's relative independence and autonomy, but also expand the entire service system's overall efficiency through concerted operation and management.

(4) Existing collection cooperation plus unified co-construction of collection resources:

Either CALIS or CASHL has its own overall plan in achieving collection development cooperation. The unified co-construction of collection resources is

mainly achieved by union cataloging, union developing databases, purchasing cooperation and division among the member libraries. In this way, the member libraries of each consortium not only can share their existing collection resources, but also can collaboratively building collection resources under overall plan and division. This model can better meet the readers demands to collection resources, avoid duplication and blind subscription or purchase, reduce budgets and save fundings at utmost.

(5) Three-tier Structure System:

Both CALIS and CASHL share resource and provide services through a "Three-tier Structure System". This system can completely cover all the members in every region, and can provide the nearest access to resources for a member library. This model has been considered to be the first relatively complete national solution for China's library information resources sharing since it was first set up by CALIS (Yan, 2005).So this system ensure these two consortia to provide effective management and better services.

(6) Multifunction consortium type:

Currently, more and more modern library consortia have multifunctions in China. With the development of networks and the enhancement of cooperation and coordination capabilities among members, the functions of library consortium keep in the continuous expansion and extension (Yan, 2005, p.27). The multifunction consortium can be more efficient and bring more benefits to the members comparing with single-function consortium.

(7) The "Centralized Service Model":

It is the main service model adopted by CASHL. Though the "Distributed Service Model" adopted by CALIS has the advantages in increasing the utilization of resources and services of each member library, and can enhance the collection development and service quality of each member library, it may cost more funds in comparing with the "Centralized Service Model". The latter model has the advantages in being able to concentrate the state's input of funds, to reduce the duplication of resource construction to the maximum degree, to make full use of the resources, to alleviate the funds difficulties of primary-level libraries, to be more convenient in coordinated management, and to greatly enhance the service efficiency (Li, 2004).

4.2 The Main Disadvantages of CALIS and CASHL in Consortium

The main Advantages of CALIS and CASHL can be summerized as follows:

(1) Different standards in the bibliographic data of CALIS:

Though CALIS has developped and launched standards and norms of bibliographic data for its own system. The "CALIS union cataloguing handbook" is the standard in China's academic libraries, but its Chinese bibliographic format is different from the National Library of China (NLC), and also different from the USA standards and international standards (Niu, 2002; Yang, 2008). This is a big obstacle that influence CALIS to share its resources with the NLC, other libraries outside its system at a national level, and libraries outside China at an international level.

(2) Incomplete revealing of collection information:

The data information in both CALIS and CASHL's databases can not completely reveal their collection information. Since usually it takes shorter time for journals' contents information been put in the contents database, but longer time for physical journals' arrival, so the data information can not completely match the collected literature. Besides, either CASHL's contents database or CALIS' Union Catalog database can not completely reveal the journal's information on discontinued subscription and lack of period (Yang, 2008) . This may cause the problem when a user apply for a piece of literature in the contents databases, but can not obtain this literature because it actually doesn't exist in the collection.

(3) The ILL system is not unified and efficient enough:

Both CALIS and CASHL use the CALIS ILL system for interlibrary loan and document delivery, while the National Library of China, National Science and Technology Library and several other important library consortia in China are using various kinds of ILL system. The disunified ILL systems cause a lot of troubles to both administraters and users. Besides, though the CALIS ILL system has a lot of functions, but it has technical loopholes that easily lead to unstable running and prone to various faults. Furthermore, CALIS adopts the "Distributed Service Model", so each member library has to install the ILL system locally to compose a big interlibrary cooperation network. Because many local member libraries lack qualified maintenance capabilities to repair the system in time, so the users are often unable to successfully register and login the system to submit applications, which can bring a lot of troubles to both users and administrators (Xu, 2008).

5. Library consortium development trend in China under new circumstances

Under recent global financial crisis, together with the sustained growth of the price in publications and readers' increasing needs to information resources and high quality services, how to achieve more cost-saving, higher efficiency and higher quality in library consortium should be a major concern to the future development trend. In this new situation, what will be the development trend of library consortia in China? CALIS and CASHL, the two most successful library consortium models in China, can provide enlightenments on replies to this question. From the above comparative analyses and summaries to these two consortia, suggestions and predictions on library consortium trend in China under new circumstances are as follows:

(1) The cost-saving models in CALIS and CASHL will be promoted

Cost-saving will cause more concerns in library consortium trend in China under new circumstances. CALIS and CASHL have set good examples for other consortia in China in reducing cost. The cost-saving models of these two consortia that will be promoted in the future library consortium trend in China are mainly as follows:

➢ Virtual & realistic combination management model. This model can effectively utilize the original collections and human resources of the member units, reduce operating costs and save funding.

➢ The cooperation of existing collection combined with unified co-construction of collection resources. In this model, the member libraries of each consortium not only can share their existing collection resources, but also can collaboratively

building collection resources under overall plan and division. This model can avoid duplication and blind subscription, reduce budgets and save fundings at utmost.

➢ CASHL's "Centralized Service Model". This model is able to concentrate the state's input of funds, reduce the duplication of resource construction to the maximum degree. So it can make full use of the resources, greatly avoid the wast of funds, and alleviate the funds difficulties of primary-level libraries.

In brief, these three models can reduce consortium cost and save funds in the aspects from management to cooperative collection development and services. So it's especially useful in the global financial crisis circumstances for reducing cost.

(2) The highly effective models in CALIS and CASHL will be promoted

The highly effective models of CALIS and CASHL will also be promoted in the future library consortium trend in China mainly as follows:

➢ Government's special funds combined with members' matching funds model. This unique funding structure can not only mobilize the enthusiasm of the central members, but also solve the problem of insufficient government funding, and ensure more continuous financial support.

➢ Three-tier Structure System. This system is reasonable in design and has been considered to be the first relatively complete national solution for China's library information resources sharing. This system can ensure a consortium to provide effective management and better services.

➢ The multifunction consortium type. The multifunction consortium can be more efficient and bring more benefits to the members comparing with single-function consortium. So more and more modern library consortia will have multifunctions in the future trend.

In brief, these three models can greatly enhance the efficiency and quality of a consortium in the aspects from funding's resources and structure to management and services. So it's especially useful in global financial crisis for solving insufficient funding problem and improving consortium efficiency and quality.

(3) The uniformity and standardization construction will earn more respect and be realized

The further development of library consortia in China require more concern and the realization of the uniformity and standardization in national bibliographic information and the ILL system. The lack of national unified bibliographic system and national unified ILL system will seriously hinder the further development of cross-system national library consortia union and national resource sharing of China. As currently, there are two major bibliographic systems in China, the Union Catalog of NLC and the Union Catalog of CALIS. These two bibliographic systems are not only different from each other, but also different from the USA standards and international standards. This is one of the main obstacles that impede the cross-system national catalog resources sharing among Chinese libraries and with the world libraries. It is also one of the main reasons that influence Chinese libraries to contribute cataloging records to OCLC WorldCat (Niu, 2002). On the other hand, the several main library consortia in China such as CALIS, NSTL (National Science and Technology Library) and NLC adopt various kinds of ILL system. When users apply ILL and DD services from

different consortium systems, they have to register and login several kinds of ILL systems to submit applications, it brings the similar troubles to ILL administrators too in management (Xu, 2008). The lack of a convenient and reliable national unified ILL system not only brings a lot of troubles to both administraters and users, but also hinder cross-system resource sharing activities. Therefore, it is in urgent need for Chinese libraries to pay more attention to the uniformity and standardization construction in national bibliographic cataloging and the ILL system, and it will be realized in the near future.

(4) Library consortia will develop to the digital library direction

Nowadays, more and more electronic resources appear with the development of the web. Any library can not ignore the collection and utilization of electronic resources, and the physical resource sharing has been combined together with the digital resource sharing. According to the consortium functions of each country's libraries provided by the ICOLC web, the coordinated purchasing of electronic resources and online ILL & DD have become the main stream of modern library consortium activities (Participating Consortia of the ICOLC, 2009). As Yan (2005) mentioned, most library consortia in China appeared in or after the middle 90's of last century when China was at the rapid development period of internet, so these consortia got rid of the traditional library consortium model at the beginning. The union catalog, public access, thematic database, ILL & DD, and consulting service of most consortia have all been designed and developped based on network. Today, many library consortia in China are trying to transform into digital library. It's for sure that more and more library consortia in China will develop to the digital library direction in the near future.

(5) The consortium scope will be broadened, different library consortia will move toward integration

Presently, there are still divides in consortia between public, academic, and special library systems as major barriers to the integration of library consortia and true resource sharing. Along with the development of network technology and the deepening of consortium activities, various types of library consortia will fuses mutually, and more intra-system consortia will develop into cross-system consortia. This phenomenon is more obvious in regional library consortia. The Shanghai Information Resources Network is the first consortium example in China that is consisted of public, academic, and special libraries (Yan, 2005). Besides, small regional library consortium network is developping into large national consortium network, and will develop into international consortium network in the future. Several digital library cooperation projects among some European countries and those among the USA and other countries manifest this tendency (Kong, 2008, p.36). As Nfila and Darko-Ampere (2002, p.211) pointed out, the development of library consortia shows a shift from a limited resource sharing to an integrated system-wide resource sharing. The integration of library consortia in national or international scope will accelerate and improve resource sharing at national or international level too. As a result, it will provide to readers more abundant resources, more convenient literature retrieval and acquisition channels and better services. Furthermore, it will be more cost-saving and

highly effective. Therefore undoubtedly, the integration of library consortia at national or international leval will be a tendency and will be realized in the future.

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