

Network of East Asian Library Networks: Feasibility

MIYAZAWA Akira

National Institute of Informatics
Director, Research Center for Testbeds and Prototyping

Contents

1. Introduction
2. Technical issues
3. Operational issues
4. Conclusion

1. Introduction

For the cooperation in authority control, there must be some computer systems, and nowadays it must be networked. Any cooperation program in the library world has to be built on some network systems. This paper discusses feasibility of such network system linking existing East Asian library networks.

Library networks, or bibliographic utilities, in East Asian countries are now fully operational in Japan, Korea and China. NII (former NACSIS) in Japan is the oldest and its online cataloging system has history of near twenty years. KERIS (former KRIC) in Korea has history of about five years. The youngest is CALIS in China and has less than two years of its cataloging system service.

All these three organizations are government funded, and strongly related to the higher education and research system policies of the countries. As a result, the member libraries of these networks are mostly university libraries. But still, these libraries represent the majority of research libraries in the countries, as there are no major research libraries except for their national libraries.

This paper discusses the feasibility of linking these three utilities.

The union catalog databases in these bibliographic utilities are results of collaborative works by many libraries. Bibliographic and authority information of participating libraries are cumulated in the union catalog databases, in addition to the national bibliography information provided by the national libraries. This is the reason why linking bibliographic utilities is a way to realize collaborative production of databases of library information for the participating libraries in these countries.

In the past, when there were fewer computers, networks were limited in some special application fields such as bank systems. (Library network evolved in 1970s US was one of such special networks.). Data exchange model in that time was tape distribution like MARC tape distribution. But in the age of Internet, data exchange model is such as server-client and

web servers. For this type of system services, bibliographic utilities have their advantages in their technology oriented nature.

For these reasons, linking East Asian bibliographic utilities is beneficial to construct new data exchange programs like authority record exchange.

2. Technical issues

In 1980s, US bibliographic utilities and the Library of Congress carried a project called LSP (Linked System Project), which produce a famous protocol z39.50 (ISO 23950). Now this protocol is widely used in the library world. This protocol will be one key technology for the linking.

New networks of China and Korea use z39.50 as their main interface with participating library systems. CALIS system of China uses extended service of this protocol as their cataloging interface, along with the basic search and retrieve service of the protocol. Korean RISS system also has z39.50 interface for its union catalog database. Japanese utility NACSIS-CAT of NII uses its proprietary protocol CATP as its cataloging interface with member libraries. But, it also has searching interface with z39.50.

The protocol is primarily for search and retrieve. It provides a standardized way to describe search operation and a way to present the result. Most common application of this protocol is to provide catalog information of a library to public. But it can be used as general search interface for any database. The version three of this protocol provides some extended feature beyond search and retrieve. Appendix 8 of this standard defines, for example, database update function in extended services. This feature allows the protocol to be used as wider application fields.

ILL protocol, or a set of protocols ISO 10160 and ISO 10161, is another key protocol in the library network field. It handles ILL message exchange and status control of an ILL transaction. It is designed for de-centralized architecture of ILL system, i.e., ILL transaction records are kept in both requester and responder systems, not in a centralized system. However, it can be used as an interface between two or more centralized ILL messaging systems.

ILL messaging system of CALIS uses this protocol and de-centralized. NII's NACSIS-ILL system is a centralized messaging system, but it has ILL protocol interface. That means these systems can talk each other, basically.

However, unfortunately, using same protocol does not directly enable interoperability of these systems. There are implementation profiles for a protocol. They may not be interoperable if they use different profile, even if they use a same protocol. For real data exchange using online protocols, generally, they need cooperation and adjustment or modification of their systems.

Record format issue always comes up when talking about international bibliographic record exchange. But, recent technological progress made this matter relatively small. Now, it is possible to convert record formats each other with minimum loss of information. Real problem of the format is not in conversion itself, but is in the cataloging conventions and practice.

To make records real exchangeable, adjustment of cataloging (including authority record practice) may be required.

Character code question has long been key issue of Asian data exchange program. But, now, with ISO 10646 UCS (Universal Multiple-Octet Coded Character Set) or UNICODE almost solved this question. In this field, East Asian library networks are advanced very much. All utilities support UCS in their union catalog databases.

But, using UCS with z39.50 or ILL protocol is still new application. There may be some additional work to be done for real exchange of data through this method.

3. Operational issues

There seems to be few technological difficulties, except for the detail. But, technical feasibility is not enough to assure feasibility of the total system.

Here, the crucial point is incentive. Assuming some kind of authority control work (though concrete shape is not shown) as its application, the fruit of authority control will benefit East Asian libraries and also world libraries as a whole. But, what will be the benefit for utilities to work as base system provider?

If number of participating libraries will grow by the linkage service, it will be good incentive for the utility. Bibliographic utility instinctively wants more participation. But, if application is just for the authority control it is dubious that so many libraries are attracted. If there are additional applications like bibliographic data exchange, which reduces foreign book cataloging workload (e.g., Chinese book cataloging in Japan etc.), it may attract some more participants in each country.

If the utility can make profit from the linking system usage, it may be benefit for the utility. But, it is unlikely that the usage ratio of the linkage service goes very high. At most two or three percent of domestic data usage seems to be realistic. Profit from linkage service will not be substantial one.

It is important issue whether system and data usage between utilities is charged or free. Profit will be small even if it is charged. But, if it is free, there might be wasteful use of the linkage service. Agreement on this issue has to be made amongst the participating utilities.

4. Conclusion

There are few technical difficulties in linking the systems. Technical environments of utilities in these three countries are almost at same level. If there is strong requirement and support from participating libraries, or from the governments, it will be possible to develop linked system within a year.

Thus the last question is “Can we win support for the authority collaborative program from libraries in these countries?” If the answer is “yes”, we can start the linked system development. If the cooperation in authority field is not enough for strong support, we may need additional programs, such as ILL, cataloging or EAST ASIAN union catalog.

This year, as the World Cup year, political relation among East Asian countries is expected to be better. It may be good chance to start a new cooperative program.