과학기술정보 장서개발정책에 관한 동향연구

A Trend Study on Collection Development Policy for Science and Technology Information Resources

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요약

세계의 대표적인 국가 과학기술정보기관들은 국가 경쟁력을 증진하기 위하여 연구자들에게 연구개발정보를 제공하고 있다. 장서개발정책은 과학기술정보기관이 연구개발을 위한 정보자원을 선별하고 정보자원을 상호 연계하여 정보네트워크를 구축하기 위한 가이드라인이다. 본 논문은 국가 과학기술정보기관의 장서개발정책의 주요 요소를 도출하기 위해서 미국의 국가의학도서관 (NLM), 영국국립도서관 (BL), 캐나다과학기술정보연구원 (CISTI), 한국과학기술정보연구원 (KISTI)의 장서개발정책을 분석하였다. 본 연구의 결과는 과학기술정보기관들이 장서개발정책 수립시 가이드라인으로 활용할 수 있을 것이다.

■ 중심어 : | 장서개발정책 | 과학기술정보 | 과학기술 장서개발정책 | 과학기술정보도서관 | 국가과학기술장서개발정책 |

Abstract

World leading national science technology information institutes provide scientists with R&D information for increasing national competitiveness. Collection development policy is the guidelines for the science technology information institutes that identify information resources and connect them together to build an information network for supporting R&D. In order to draw main elements of the collection development policy for national level science and technology information institutes, this paper analyzed the policies of National Library of Medicine (NLM), British Library (BL), Canada Institute for Scientific and Technological Information(CISTI), and Korea Institute of Science and Technology Information(KISTI). The results of this study can be used as the guidelines for the science and technology information institutes for establishing collection development policy.

■ keyword : | Collection Development Policy | Science Technology Information | Nation STI Library | Science Technology Information Collection Development Policy |

I. Introduction

There are several factors and a variety of tries for increasing national competitiveness. There is strong correlation between the national competitiveness and research and development (R&D) competitiveness. Each country in the world tries to raise R&D for national competitiveness. It is considered that science and technology information (STI) is one of the basic elements for the raising the R&D competitiveness in

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the knowledge information society. Good STI resources are needed for researchers who are engaged in R&D.

The R&D results usually appear in papers, patents, technical reports, standards and etc. The achievement of ST R&D is often evaluated by the numbers of articles in core scholarly journals listed in Science Citation Index (SCI) and Science Citation Index Expended (SCIE). SCI articles and peer-reviewed journals emanating from the developed countries of the OECD is essential to maintaining national and research competitiveness.[1] OECD report of 2006 focused on global growth of ST knowledge in science technology and industry.

According to Thomson Reuters, there are 51 countries that published more than 20,000 articles in Science Citation Index in 2007. [Table 1] shows the numbers of articles in SCI in Web of Science by nations.

Table 1. The numbers of articles in SCI by countries

country	number of paper	ranking
The United States of America	276,537	1
The United Kingdom	75,576	3
Canada	36,782	7
Republic of Korea	17,785	11

The national level STI institutes provide the STI resources to help and support researchers. The STI institutes develop their acquisition guided by collection development policy under strategic plan. This paper tries to compare and analyze the STI collection development policies provided by national STI institutes ; National library of medicine (NLM) in the United States of America, British Library (BL) in the United Kingdom, Canada Institute for Scientific and Technical Information (CISTI) in Canada, and Korea Institute of Science and Technology Information (KISTI) in Korea. The purpose of this paper is to provide a guideline for STI collection development policy to adjust well in rapid changing information environment and prepare for near future.

II. Collection Development Policy(CDP)

According to ALA Glossary of Library and Information Science, definition of collection development is a number of activities related to the development of the library collection, including the determination and coordination of selection policy, assessment of needs of users and potential users, collection use studies, collection evaluation, identification of collection needs, selection of materials, planning for resource sharing, collection maintenance, and weeding.[2] The definition of policy is an administrative plan or series of guidelines, preferably written, which delineate acceptable practices and actions for a wide range of activities within an organization.[3] In 'Online Dictionary for Library and Information Science', the definition of collection development policy(CDP) is a formal written statement of the principles guiding a library's selection of materials, including the criteria used in making selection and deselection decisions (fields covered, degrees of specialization, levels of difficulty, languages, formats, balance, etc.) and policies concerning gifts and exchanges.[4] An unambiguously

1. Hee-Yoon Yoon(2007), "Correlation Analysis Between National Competitiveness and National Research Competitiveness in OECD Countries," Journal of the korean society for library and information science, vol.41, no.12, p.105.
2. H. Youngedi and T. Belanger ed., *ALA Glossary of Library and Information Science*, American Library Association, Chicago, 1983, p. 49.
3 Ibid p. 172.

library might have policies covering specific areas of activity, including collection development.

The primary function of the national level science and technology information institute and information centers is to meet the mission of the institutes and users' needs. The mission of the STI institutes includes goals of the institutes. The information resources and services in the institutes support the goals. The collection development polices are administrative plans or series of guidelines for collection development descried the ranges, subject, languages of information resources for acquisition. The collection development policies include collaboration in collection development, considerations for maintaining and weeding the collections, criteria of selection, format of materials and so on.

The STI institutes collect printed materials and will more provide users with online access to electronic resources such as e-journals, e-books, and DB. Users like to use electronic information resources because they are easy to use in any time any where. Therefore, the collection development policy should treat electronic resources as well as analog resources to meet users' needs.

III. The Collection Development Policy for National STI Institutes

1. National Library of Medicine (NLM) in the United States of America

NLM cooperate with the Library of Congress and National Agricultural Library in the United States. A certain amount of duplication of collections of three institutes is inevitable. There are two science and technology information centers in the Unites States of America, the one in National Library of Medicine and the other one is National Agriculture Library. This paper will mention NLM as a STI institute in the United States of America. NLM was established 'to assist the advancement of medical and related sciences and to aid the dissemination and exchange of scientific and other information important to the progress of medicine and to the public health'. Central to this mission is the development of a collection that supports contemporary biomedical and health care research and practice as well as future scholarship.[5] The collection development policy was established in 1976. The policy updated in 1983 and 1992. NLM has the responsibility for acquiring the biomedical literature in any format if it is appropriate to the fulfillment of its mission. Therefore, NLM attempts to aggregate and maintain for permanent access library materials of biomedical literature and health related subjects in any format.

According to NLM homepage, NLM holds 9,186,000 book and non-book items, 4,900 journals indexed for MEDLINE, 20,800 serial titles are received and 623,000 articles indexed in all databases (as of 2006).

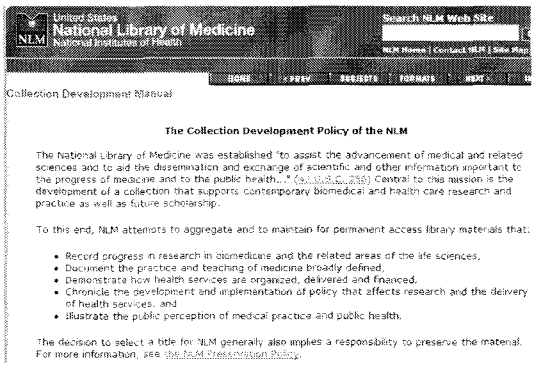

Figure 1. CDP of NLM on the web

2. British Library (BL) in the United Kingdom

4. ODLIS: Online Dictionary for Library and Information Science, < http://lu.com/odlis/odlis_c.cf>
5. The collection Development Policy of the NLM, http://www.nlm.nih.gov/tsd/acquisitions/cdm/policy.html

The collection of the British Library embraces virtually all known languages. It traces its formal history to the foundation of the British Museum Library in 1753. The quality, size and depth of the Library's collection (estimated at more than 150 million items) are central to its position as the UK's national library.

In the United Kingdom, science, technology and medicine(STM) research dominated UK innovation. 80% of research expenditure is used by STM. STM research is one of government's highest priorities. UK government recognised that BL takes the important role in supporting scientific research in the UK. BL is the only organization to collect, reserve and provide long-term access to research information for the United Kingdom.[6] 40% of BL collection is STM. About 50% of BL acquisition budget is STM materials. BL tries to collect credible, trustworthy resources in STM. BL also is developing web portal for easy searching and access to BL holdings including STM. Through resource sharing and collaboration, BL tries to provide more STM resources to users. BL collaborates with leading STM publishers to provide fast electronic access to large aggregated source of content via secure electronic delivery. BL preserves STM digital materials supported by The Legal Deposit Libraries Act 2003. BL joints digital preservation colation with JISC, joint participants in UK Web Archiving Consortium, and creates digital infrastructure. BL is leading a major initiative to develop an in-depth 10 year plan for STM.[7]

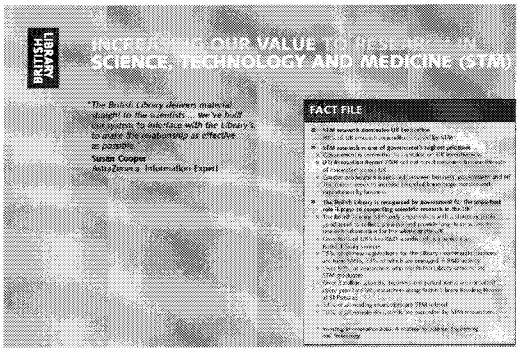

Figure 2. increasing value to STM research

BL's collection development policies reflect the function as a library of first instance and last resort; last resort for those whose primary access is their university, company or public library and first instance where the library is the sole convenient source for the research material they require. The collection also supports scientific enquire and research both in Reading Rooms and by being available either for loan or for copying and delivery to the researcher via the library's interlending and document supply services.[8] The CDP describes legal deposit, purchased material, donations and permanent loan, borrowing items for public exhibition, duplication, retention and disposal and etc. British library collects ST literature through deposit, purchasing, and gifts & exchanges in journals, monographs, abstracts, indexes, technical reports, conference proceedings, patents, and standards in printed and electronic formats.

The British Library embarked on a review of collection development in 2006, so called 'Content Strategy'. It looked at its Arts & Humanities and Social Sciences collections and collecting through a subject approach, using the 2008 Research Assessment Exercise (RAE) categories. Next subjects will be Science and Technology. The

6. http://www.bl.uk/aboutus/stratpolprog/increasingvalue/stm.pdf
7. Ibid.
8. Collection Development Policy, <http://www.bl.uk/aboutus/stratpolprog/coldevpol/index.htm>

consultation exercise of 2007, which had 143 response, supported the new strategy, and since then BL have been in a process of implementation. The process of implementation has included: the development of an action plan, the setting up of content groups with a lead curator to ensure collecting supports researcher needs, the revision, where the consultation suggested changes, of the subject templates, conductances on datasets and research publications from India and China, criteria for assessing collection development partnerships, collaborations, alliances and consortia[9]

3. Canada Institute for Scientific and Technical Information (CISTI) in Canada

National Research Council-Canada Institute for Scientific and Technical Information (NCR-CISTI) is holding over 50,000 different serial titles, over 800,000 books, conference proceedings and technical reports, 2 million technical reports on microfiche from around the world, journals from the world's leading scientific publishers, such as Elsevier, Springer and others, all languages and all countries where STI is published and journals indexed in major scientific medical databases.

CISTI's vision is to be a leader in driving the exploitation of scientific information to create value for Canadians. CISTI's mission is to advance research and innovation through high-value information and publishing services in science, technology, and medicine. CISTI's CDP ensures CISTI's vision and mission. The purpose of the CISTI's CDP is follows;

- Defines the framework for developing and managing the collection, thus assisting in determining priorities
- Ensures that collection development is planned and occurs within the context of CISTI's mandate, vision, mission and strategic plan
- Addresses the long-term needs of Canadians for scientific, technical and medical (STM) information, while supporting the short-term strategic priorities of CISTI
- Preserves the stability and continuity of the collection, thereby allowing CISTI to fulfill its mandate
- Explains the nature and scope of the collection, and the principles upon which the collection is developed
- Serves as an information tool to plan for wider cooperation and resource sharing through partnerships, collaborations, alliances and consortia.[10]

CISTI's CDP described the CISTI's main and special collection, collection development principles for an national resource, a local resource, access and ownership, copyright and licenses, collection development guidelines for selection criteria, selection considerations by publication type, deselection. CDP also mentioned collection maintenance for preservation and disposal of material and special acquisitions modes for purchasing consortia, publication related memberships, international publication exchange program and donations.

9. Content Strategy, <http://www.bl.uk/aboutus/stratpolprog/contstrat/index.html>
10. NRC-CISTI Collection Development Policy: Canada Institute for Scientific and Technical Information, <http://cisti-icist.nrc-cnrc.gc.ca/cms/policy_overview_e.html>

Figure 3. Collection Development Policy of CISTI

4. Korea Institute of Science and Technology Information (KISTI) in Korea

Korea Institute of Science and Technology Information (KISTI)'s mission is 'R&D for ST knowledge infra and establishment of service'. KISTI's CDP tries to meet mission. KISTI collects journals, proceedings, monographs, patents and technical reports in printed and electronic format. KISTI also collect metadata, human resources, fact information, trends and analysis databases for satisfying user needs as [figure 4].

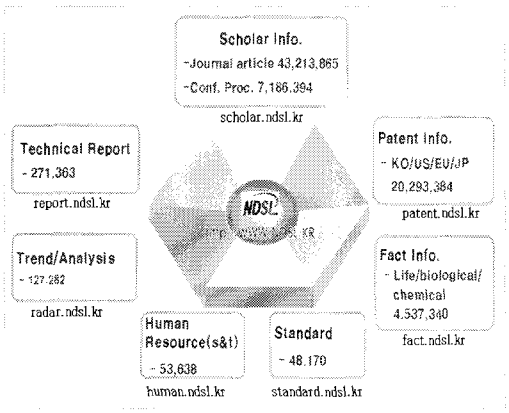

Figure 4. KISTI' s information resources

KISTI has 5 principles of information resource development strategy that are archiving collection, sharing collection, backup collection, hybrid collection, and perfect collection. KISTI's CDP treats mission of KISTI, purpose of CDP, the basic principles for collection development, collection range of the information resources (subjects, types, languages, life cycle of collection), and information resources formats. It also mentions printed materials and electronic materials, and internet resources for journals, conference proceedings, technical reports and etc. It also mentions national license and consortia, selection and deselection, disposal of information resources, cooperation with other institutes, responsibility of collection development and acquisition, and revision of CDP.

5. Comparison CDP in NLM, BL, CISTI and KISTI

CDP of 4 national STI institutes (NLM, BL, CISTI and KISTI) were researched. CDP should describe mission, target users, scope, language, form of resources, preservation, weeding and etc.

Information environment and users information seeking behavior is changing dramatically. The national STI institutes collect analog and digital resources to fulfill users needs for raising national R&D competitiveness. National STI institutes are needed to consider not only analog resources but also digital resources for collection development policy for hybrid collection and archiving the digital resources. However CDP for digital resources is complicated. The characteristics of digital resources are different from analog resources. Among the digital resources, e-journals, DB are not contained in physical medium and not allowed ownership but remote access by licensing. CD-Rom and DVD are electronic resources in physical medium, but the ownership is not always

allowed from publishers.

National institute that have the mission to collect, preserve and transmit knowledge to the next generation face serious challenges. The CDP should mention about elements related digital resources for instance license, archive, evaluation criteria, consortium, weeding and etc. The statue of CDP of 4 National STI institutes (NLM, BL, CISTI and KISTI) is as [Table 2]. Most of elements are already contained their CDP, but some of them should be added later.

Table 2. The elements for CDP of 4 institutes

Name	Mission	User	Scope	Digital resource	License	preservation	weeding	Selection criteria
NLM						-	-	
BL						-		
CISTI								
KISTI						-	-	

IV. Conclusion

In this study, collection development policy for world leading national STI institutes are listed and compared. To support R&D scientists National STI institutes try to collect good resources under CDP.

NLM provides medical and biological information to the world, but the last CDP is revised in 1992. NLM should revise the CDP to reflect current changes. To prepare for the future, strategic plan should be established.

BL makes an effort to adjust new information environment. The traditional CDP should be revised, so BL tries to 'Content Strategy' to know the users and publishers needs. BL announced 'the British Library's Strategy 2008-2011'. In the strategy, BL aims to provide researchers with a critical mass of digital content by extending collecting of UK digital publications; connect researchers with content in collection and other resources in innovative ways; transform service for researcher who need access to unrivalled newspaper collection by implementing newspaper strategy; secure e-collection for future researchers by building robust systems to underpin BL digital library; and preserve physical collection for future researchers by considering storage, security and preservation holistically.[11] CDP should developed under new strategic plan.

CISTI revised CDP that cover the current situations for STI. For instance, copyright and licenses, selection criteria, selection considerations by publication type, collection maintenance for preservation and disposal of material and special acquisitions modes for purchasing consortia are mentioned. The CISTI's CDP can be role model for new CDP for other STI institutes and libraries. However, CISTI is reengineering the organization. The new CDP wil emerge and reflect the changes of organization in new era.

KISTI's CDP covers analog resources and digital resources. KISTI's CDP mentioned the new issues such as license briefly. Current Issues should be more detailed and stated such as preservation, web resources, consortia for electronic resources and collaboration with other domestic and overseas organization for analog and electronic materials. For the good CDP, KISTI should establish the strategic planning for collection development and archiving. According to strategic planning, good CDP can be prepared. KISTI's CDP should be posted on the web for sharing the idea with users and cooperative organizations.

In the era of knowledge information society, STI institutes needs to establish CDP for new situation

11. The British Library's Strategy 2008-2011, <http://www.bl.uk/aboutus/stratpolprog/strategy0811/index.html>

and resources. This paper compared the CDP of National STI institutes and treated new trends and solutions of CDP. The results can be helpful to STI institutes when they build new CDP. Based on good CDP, National STI can collect R&D resources for raising national competitiveness.

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