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Developing a National Preservation System for STM e-Journals

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Developing a National Preservation System for STM e-Journals

1. Introduction

2. Need for Digital Preservation Strategies in China
3. Need for a National Collaborative Preservation Strategy
4. Suggestions for A Collaborative National Preservation

1. Introduction

- ❖ China is a large developing country
 - ↪ a rapid progress in science and technology research
 - ↪ Step by step becoming a key countries in STM research

1. Introduction

- ❖ yearly national investment increased in a double digits pace

items	1999	2000	2001	2002	2003
Yearly R&D investment *	67.89	89.6	104.25	128.76	153.96
Yearly Increasing rate	17.7%	17.9%	16.3%	23.5%	19.6%
R&D Investment / GDP	0.83%	1.0%	1.1%	1.23%	1.31%

* Unit: Billion RMB

1. Introduction

- ❖ Scientific research **output** has increased in a faster pace

Region and country	1988	1992	1994	1996	1998	2000	2001
United States	177,662	198,864	199,769	201,798	197,890	196,221	200,870
Japan	34,435	44,143	46,692	50,392	54,658	55,413	57,420
United Kingdom	36,509	42,404	45,436	47,904	47,916	49,485	47,660
Germany	29,292	35,120	36,901	39,123	43,953	43,440	43,623
France	21,409	26,172	28,266	29,755	31,809	30,960	31,317
China	4,619	6,956	7,821	10,070	13,807	18,142	20,978
India	8,882	10,100	9,928	9,736	10,066	10,047	11,076

According to NSF, Number published by Chinese authors in core international research journals has increased nearly 5-fold in 14 year.

1. Introduction

- ❖ To support and sustain such strong STM research, many large scale efforts have been taken.
 - ❧ CSDL (Chinese national Science Digital Library)
 - ❧ CADLIS (Chinese Academic Digital Library and Information System)
- ❖ Chinese users rely on e-resource (especially e-journals) and networked services as their MAIN channel of information access.

1. Introduction

- ❖ Considering the factors:
 - ✎ China relies much on foreign STM information
 - ✎ Most of STM information is digital
- ❖ long-term access to STM Information is a national strategic importance.

1. Introduction

- ❖ With this background. We will
 - ↪ summarize the current status of digital resource usage in Chinese research communities
 - ↪ describe existing arrangements for perpetual access,
 - ↪ introduce a framework of the national collaborative preservation strategy
 - ↪ in search for a technologically advanced, economically sound, operationally reliable, and organizationally sustainable DP mechanism
 - ↪ give a proposal for a Chinese Digital Preservation Coalition (CDPC) for STM e-journals

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2. Need for Digital Preservation Strategies in China

- ❖ 2.1 Foreign STM e-Journals Usage in Chinese Research Libraries
- ❖ 2.2 Current Perpetual Access Arrangements in Chinese libraries

2.1 Foreign STM e-Journals and Its Use in Chinese Research Libraries

❖ Several Trends

- ✎ total number of foreign STM e-journal titles in many libraries has all far outnumbered the printed ones

2.1 Foreign STM e-Journals and Its Use in Chinese Research Libraries

Library Name	Foreign STM e-journals	Foreign STM p-journals	Note
Tsinghua University	5436	864	Level 1 Univ.
Peking University	4241	1126	Level 1
Zhejiang University	4500	1250	Level 1
Beijing Institute of Tech	1895	305	Level 2
Lanzhou University	1103	95	Level 3

Compare of Foreign e-journal titles and printed one in some University

2.1 Foreign STM e-Journals and Its Use in Chinese Research Libraries

❖ Several Trends

- ❧ Total number of foreign STM e-journal titles many libraries has all far outnumbered the printed ones
- ❧ Usage of foreign STM e-journal become main streams

2.1 Foreign STM e-Journals and Its Use in Chinese Research Libraries

Source of e-journal	e-journal database	Number of download	Total number
Foreign STM e-journals	ACM	19,417	6,340,429
	ACS	1,328,367	
	Blackwell	155,614	
	ElsevierSCIENCEDIRECT	3,128,510	
	IEEE	501,603	
	John wiley	345,595	
	Nature	209,539	
	PQDD	159,436	
	Springerlink	186,231	
	AIP/APS	306,117	
Chinese STM material	Founder books	31,319	2,937,183
	VIP journals	2,905,864	

STM e-journal usage in Chinese Academy of Sciences

2.1 Foreign STM e-Journals and Its Use in Chinese Research Libraries

❖ Several Trends

- ❧ Total number of foreign STM e-journal titles many libraries has all far outnumbered the printed ones
- ❧ Usage of foreign STM e-journal become main streams
- ❧ Readers' behaviors Changed. They become so used to digital access ...

2.1 Foreign STM e-Journals and Its Use in Chinese Research Libraries

Main ways of your using the library resource	Total Number
From office or from the laboratory	2223
From home	229
On business trip	44
Ask a colleague or a students of mine to find for me	117
From libraries	111

Most users access information provided by libraries online, primarily from offices or labs – Investigation From LCAS

2.2 Current Status of Perpetual Access Arrangements

- ❖ For key institutes in China, digital resources, especially foreign STM e-journals.
 - ↪ Become major part of their library collections
 - ↪ represents the main streams of usage by their users.
- ❖ So..., **Securing perpetual access to these resources is a critical and urgent task**
- ❖ **How about Perpetual Access Arrangement in China?**

2.2 Current Status of Perpetual Access Arrangements

- ❖ The general situations in perpetual access arrangements by Chinese libraries.
 - ❧ Many licenses have no formally prescription
 - ❧ Many licenses only contain vague language
 - ❧ Some licenses have provisions about perpetual access, but strings are still attached

Continue →

2.2 Current Status of Perpetual Access Arrangements

- ❖ The general situations in perpetual access arrangements by Chinese libraries.
 - ❧ Some providers agree to provide perpetual copies at intervals during the license period, but with only raw data lack of documentations
 - ❧ Some STM databases set up local mirror sites, but withholding all the rights for data and software

2.2 Current Status of Perpetual Access Arrangements

- ❖ As matter of fact, major library systems signed a Statement of Requirements for Digital Resources Acquisitions demanding perpetual copy clauses. But few libraries have established systematic policies in acquisition of digital resources

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3. Need for a National Collaborative Preservation Strategy

3.1 Current Efforts for Digital Preservation

3.2 Challenges to Individual Digital Preservation

3.2 Existing collaborative library systems

3.4 Challenges for a collaboration strategy

3.1 Current Efforts for Digital Preservation

- ❖ WICP (Web Information Collection and Preservation Project) by National Library of China (NLC)
- ❖ Library of CAS LOCKSS project. Preserve e-journal by LOCKSS in Chinese environment
- ❖ Long-term Preservation of Electronic Theses and Dissertations (ETD) by CALIS
- ❖ Preservation Strategies and Infrastructures for Long-Term Preservation of Digital STM Resources , a NSTL/LCAS study

3.2 Challenges to Individual Digital Preservation

- ❖ Challenges for **Individual** Digital Preservation
 - ❧ Digital preservation systems are expensive
 - ❧ Digital preservation systems are technically challenging
 - ❧ Digital preservation systems face legal and contractual challenges
 - ❧ Digital preservation systems require long-term organizational commitment and high-level involvement
- ❖ to meet these challenges is to pool our resources together and to win the support of our parent

3.3 Existing collaborative library systems

- ❖ Major active digital library systems in China
 - ❧ Chinese national Science Digital Library (CSDL)
 - ❖ by Chinese Academy of Sciences, 91 institutes
 - ❧ Chinese Academic Library and Information System (CALIS)
 - ❖ Ministry of Education, 500 academic libraries.
 - ❧ Some regional digital library coalitions
 - ❖ Jiangsu Academic Library and Information System (JALIS) , 44
 - ❧ The National Science and Technology Library (NSTL)
 - ❖ MoST, Virtual library, 7, Basic, Agri., Med., Eng,
- ❖ It would be more effective to take the advantages of existing library consortia

3.4 Challenges for a collaboration strategy

- ❖ The range of strategically important resources and related selection criteria. (what to preserve)
- ❖ A responsibility system and allocation criteria of responsibilities. (who preserve what, provide what service)
- ❖ A requirement system for selection of the preserving institutes, including the criteria for trustable repositories (how to preserve)
- ❖ A set of legal rights management requirements, tied with license negotiations with publishers (how to guarantee the right to preserve)
- ❖ A funding mechanism (for incentive)
- ❖ An evaluation scheme and procedures (for monitor)

4 Suggestions for A Collaborative National Preservation

4.1 Some National Collaborative DP outside China

4.2 Suggested Principles for Chinese Digital Preservation Coalition (CDPC) for Foreign STM e-journals

4.3 Suggested responsibility system of CDPC

4.4 Structure for CDPC

4.1 Some National Collaborative DP outside China

- ❖ DP has a long history of collaboration, initial projects such as Cedars and NEDLIB
- ❖ Three models
 - ❧ Centralized models. E-Depot, PANDORA
 - ❧ Coalition model. DPC, Nestor, KOPAL
 - ❧ Cooperative Partnership model. NDIIPP
- ❖ We suggest a collaborative partnership model. Named CDPC (Chinese Digital Preservation Coalition for Foreign STM e-journals)

4.2 Suggested Principles for CDPC

1. CDPC is a public service for nationally strategically important STM e-journal resources, supported by public policy commitment and (at least partly) by public investment.
2. CDPC is a collaborative system where responsibilities are shared among a wide range of participating institutions. (including preserving institutes and none-preserving institutes)

4.2 Suggested Principles for CDPC

3. CDPC select some members as the **preserving institutes** for designated resources according to
 - ❧ the legal or public status of these institutes
 - ❧ their acquisitions of the target sources
 - ❧ existent arrangements like mirror sites
 - ❧ technical capabilities
 - ❧ institutional commitment, and administrative expertise
 - ❖ Selected institutes receive respective funding support.

4.2 Suggested Principles for CDPC

4. CDPC requires managed responsibility for **designated preserving institutes**, maybe by contracts
 - ❧ to establish the obligations of public services,
 - ❧ provision of sound management practices,
 - ❧ adherence to standards and best practices commonly accepted in the field.

4.2 Suggested Principles for CDPC

- ❖ CDPC also requires managed responsibility from **non-preserving institutes**, again maybe by contracts,
 - ✧ to establish the obligations to support by securing the rights for the designated preserving institutes
 - ✧ by following rights management policies
 - ✧ by necessary financial compensations for the preserving institutes.

4.2 Suggested Principles for CDPC

6. CDPC strives for sustainability where efforts are made, on one hand, for reliable and strong financial support infrastructure, on the other hand, for organizational control, regular evaluation, fail-safe arrangements, and succession arrangements.

4.3 Suggested responsibility system of CDPC

❖ (1) Partners of CDPC

❖ must be a Chinese public institute, consisting of following types of members:

- ❖ National Library of China. legal deposit library
- ❖ Selected major research libraries. LCAS, Lib of Tsinghua Univ., Peking Univ. Lib.
- ❖ A few selected major public libraries. such as Shanghai Library

4.3 Suggested responsibility system of CDPC

❖ (2) Types of digital preservation repositories in CDPC.

☞ Three types

- ❖ The Legal national deposit. NLC

- ❖ A number of distributed national archives for designated resource

 - ☞ For example LCAS, act as the National Library of Sciences, concentration in basic sciences, will preserve e-journal databases like AIP/APS, ACS, IOP, and the like.

- ❖ Some repositories with overlapping resources

 - ☞ Distributed geographically, serve as back-up system

4.3 Suggested responsibility system of CDPC

- ❖ (3) Further considerations for the allocation of the responsibilities.
 - ❧ Legal requirements
 - ❧ Unique STM e-journal resources
 - ❧ Critical to the organization's mission
 - ❧ Existing resource service and preservation arrangement
 - ❧ Technical and administrative expertise

4.4 Structure for CDPC

- ❖ An overseeing committee
 - ↪ consist of scientists, funding agency representatives, and public representatives. overseeing and evaluation of CDPC.
- ❖ An executive committee
 - ↪ made of key preserving members, key served members and funding agency representatives. implement and manage the operation
- ❖ A number of special working groups
 - ↪ Example. resources plan, preservation technologies, metadata, preservation evaluation,
- ❖ Members
 - ↪ preserving institutes, non-preserving institute(safeguard their interests)

Summary

- ❖ describe the fast increasing dominance of digital STM e-journals in Chinese research institutes and universities
- ❖ analyses the challenges for guaranteeing long-term access to these resources
- ❖ explore factors that have to be considered in developing strategies for digital preservation,
- ❖ outline a national preservation system for STM e-journals.



QUESTIONS?

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Thanks!

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