



Date : 15/05/2006

**Comparing with three Preprint systems
- a case study of OA in China**

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Meeting:	157 Asia and Oceania
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Simultaneous Interpretation:	No
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WORLD LIBRARY AND INFORMATION CONGRESS: 72ND IFLA GENERAL CONFERENCE AND COUNCIL

20-24 August 2006, Seoul, Korea

<http://www.ifla.org/IV/ifla72/index.htm>

Abstract

To study the developments and practices of Open Access in China, three OA systems such as Qiji eprint - Chinese Preprint System and Sciencepaper online, are discussed in this article. Through visiting the website, sending out questionnaires, and referring to relative materials, we obtain some data about the three OA archives, such as the operating model, funding resources, subject coverage, reviewed system, software, and web traffic etc. By analyzing the data above, comparing the advantages and disadvantages of these three OA systems, comparing with the foreign famous OA systems, suggestion for establishing a proper OA model in China has been proposed,

1. Introduction

Open Access (OA) publication has been regarded as the coming model of academic publication, and it is a good way to improve the communications of scientific research information between the academe and the people. According to the Open Access News, the Open access movement is putting peer-reviewed scientific and scholarly literature on the

Internet. Making it available free of charge and free of copyright and licensing restrictions. Removing the barriers to serious research. During the recent 10 years, the Open access movement has been developed very fast in the oversea and it has produced a great impact on the domains of scientific research and publication. According to a general estimate, it has 2000 kinds of peer-reviewed open access journals and 500 inter- operational open access archives/repositories all over the world. Those famous academic publishing corporations, such as NPG, Elsevier, Springer, Blackwell, have adjusted their policies on publishing and access one after another, in order to face the challenge and impact from Open Access Movement. At the same time, the Open Access Movement has been supported strongly by the governments in each country. China had signed the <Berlin Announcement> on 24th May 2004, and Chinese scientists will promote the sharing of network scientific resources together with all the scientists in other countries.

2. Open Access in China

In general, there are two publishing models of the Open Access science papers: one is Open Access Journals, which is called “Gold Road”; another is Author self-archiving or Institutional archive, which is called “Green Road”. OA is something new in China, and the Open Access Movement is still on the preliminary phase in China, that is to say, Chinese OA systems are almost belong to the latter, the Green Road at the present time. Moreover, they largely rely on the e-print archives. According to an investigation, the mainly institutional archives in China are: Preprints of High Energy Physics Group of Shan Dong University, Preprints of Center of Mathematical Sciences of Zhe Jiang Unviersity, Preprints of Nankai Mathematics etc. However, the quantity of embodied paper is not enough, and the subject range is not various (mainly focus on the physics and mathematics), the function is simple, and not well known are the common characters of these institutional archives.

Archives	Quantity
Preprints of High Energy Physics Group, Shandong University,	3
Preprints of Center of Mathematical Sciences, Zhejiang University	51
Preprints of Nankai Mathematics	54

(Table-1)

In spite of that, there are still three integrated institutional archives in China: Qiji eprint Chinese Preprint System and Chinese Sciencepaper online. Comparing to the others e-prints OA systems, these three institutional archives have the following characters. First, their subject coverage is relative comprehensive; second, the quantity of science papers is large; third, the function of the three OA systems is relative strong. The most important of all, they have been developed on proper scale and have great impact in China. And it is their creation and popularization in China to make the Chinese people know and understand about OA gradually. So we can consider them the delegates of OA systems in China.

3. Comparing and analysis of three OA systems in China

The data about the three OA systems involved as follows, such as the operating model, funding resources, subject coverage, reviewed system, software, and web traffic, have been obtained by visiting the website, sending out questionnaires, and referring to relative materials. Suggestion for improvement has been proposed based on statistic analysis of above data.

3.1 In General

3.1.1 Qiji e-print

Qiji e-print, founded on August 12, 2003, is the first open access e-print archive in China. It is a nonprofit project to prompt self-archiving and open-access of scientific and educational resources in China. It is operated by volunteers in their spare time and supported mainly by donations.

3.1.2 Chinese Preprint System

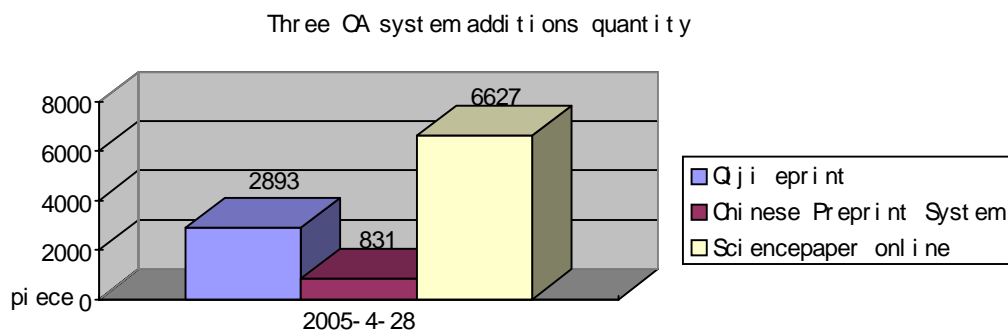
Chinese preprint system was founded on March 15, 2003. It is operated by ISTIC (Institute of Science & Technology Information of China) and NSTL (National Science & Technology Library of China).

3.1.3 Chinese Sciencepaper online

The Chinese Sciencepaper online, founded in Oct. 2003, is operated by the Science and Technology Development Center in Ministry of Education of China. It is a no-profit website.

3.2 Scientific Papers

3.2.1 Quantity

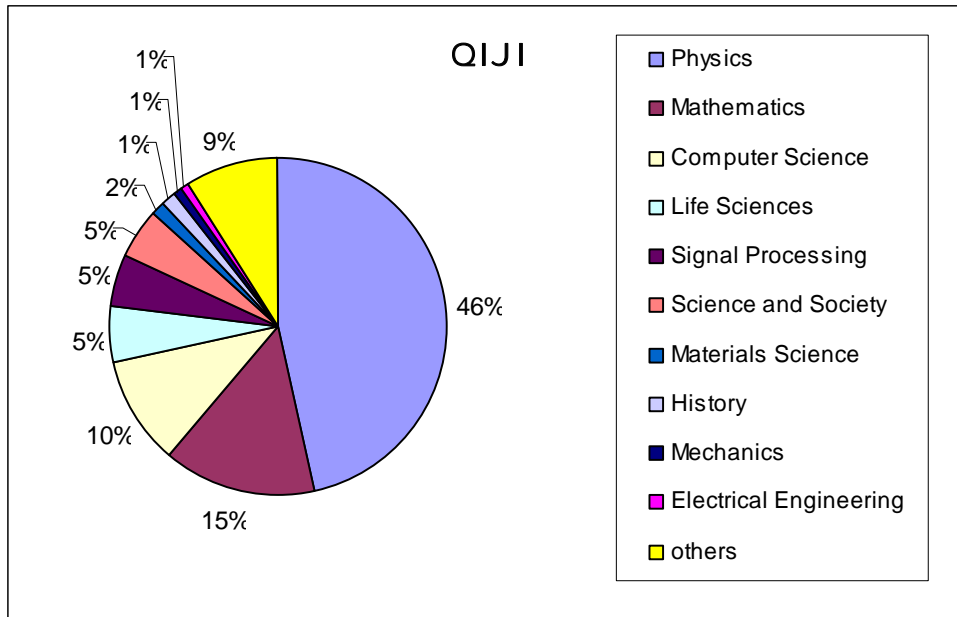


(Chart

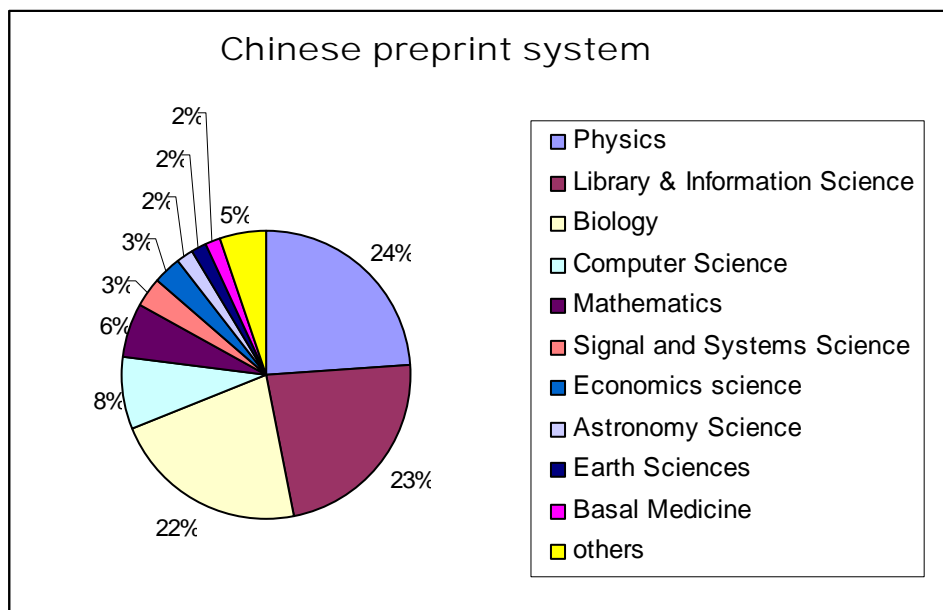
-1)

Among the three OA systems, the Sciencepaper online's quantity of scientific papers is the most. In addition, the website still provides 40 kinds of transactions and approximately 20,000 excellent works which can be download full-text freely.

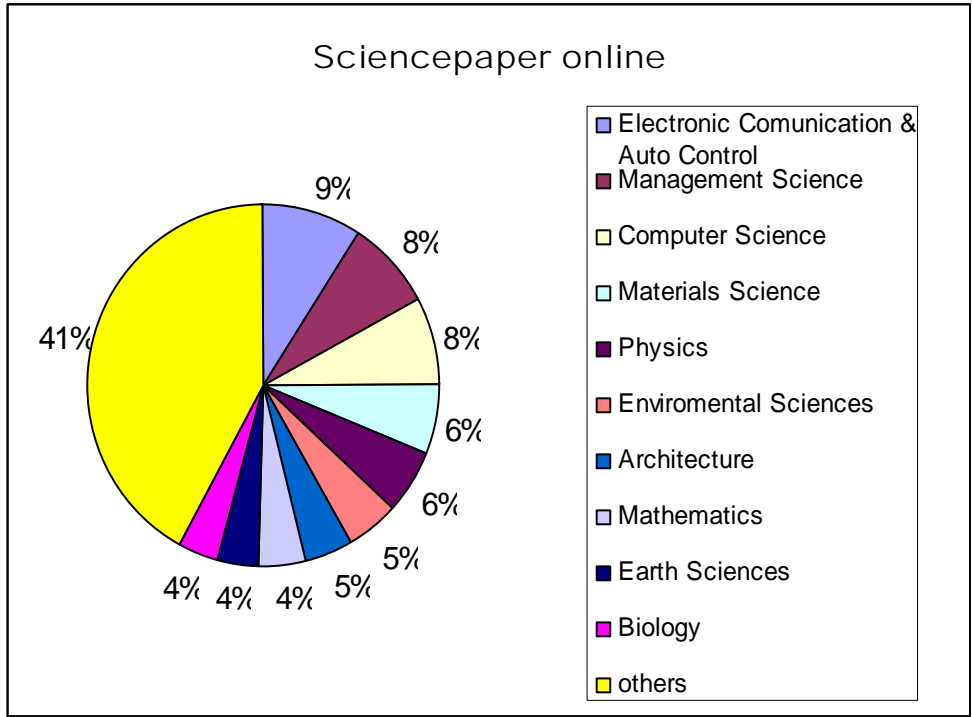
3.2.2 Subject Range in top10 -by quantity of scientific papers



(Chart -2)



(Chart - 3)



(Chart -4)

The total quantity of the top10 is more than 50% in each OA system, and the subject coverage mainly focuses on natural science and engineering, especially on Physics, Mathematics and Computer Science.

3.3 Reviewed system

OA systems	Peer-reviewed system	Reviewed way
Qiji eprint	yes only on physics and mathematics	Reviewed before publish
Chinese Preprint System	no	Reviewed after publish
Sciencepaper online	yes	Reviewed after publish

(Table - 2)

Because of the financial problem, QiJi.cn has reviewed the scientific papers before published only on the physics and mathematics. The Sciencepaper online has introduced the peer-reviewed system since Dec.2005, and engaged 120 professional experts who came from different disciplines. Although the papers on it have been published before been reviewed, it still can pick out some excellent studies.

3.4 Operation model and financial resource

OA systems	Operation model	Financial resource
Qiji eprint	No-profit project	mainly by donations.
Chinese Preprint System	No-profit project	Funded by government
Sciencepaper online	No-profit project	Funded by government

(Table -3)

From above we can get to know that all the three OA system are non-profit projects, but they have large differences in the financial resources. QiJi is operated by volunteers in their spare time and supported mainly by donations and advertisement. Chinese Preprint System belongs to the research production of the Ministry of Science and Technology of China, which is funded by the government and sponsors. The Ministry of Education of China funds the Sciencepaper online completely, so its operation fund is comparatively enough.

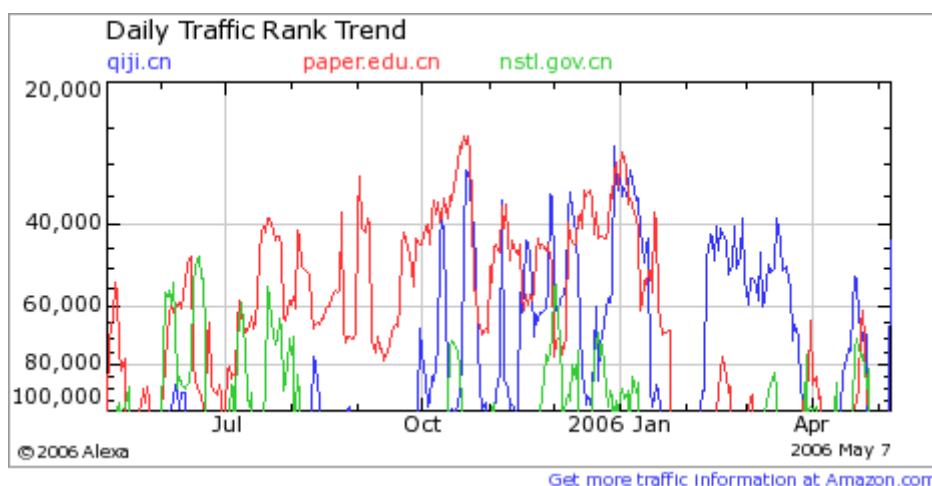
3.5 Software and Traffic

3.5.1 using software

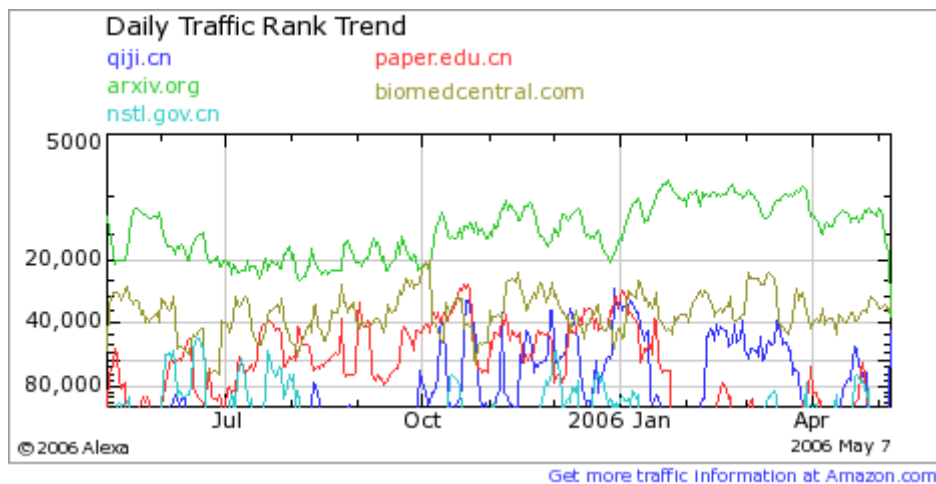
OA systems	Software
Qiji eprint	Open Source Software
Chinese Preprint System	Open Source Software
Sciencepaper online	Open Source Software and commercial software

(Table -4)

3.5.2 Traffic Rank



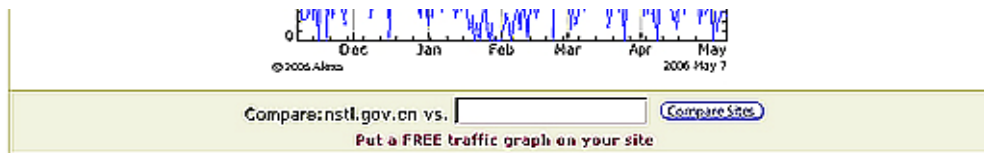
(Chart -5)



(Chart -6)

From above two charts, we can come to the conclusion that Qi ji's daily traffic is a little lower than that of Sciencepaper online, and both of them are obviously higher than the Chinese Preprint System. However compared with the foreign famous OA systems, the arxiv.org and Biomed for instance, still have strong dissimilarities.

Annotations: The Chinese Preprint System (<http://www.prep.istic.ac.cn>) is the affiliation of NSTL(<http://www.nstl.gov.cn>). Its traffic rank is only 2%. (See Chart-6,7)



[Learn more about Traffic..](#)

Traffic Rank for nstl.gov.cn (what's this)

Today	1 wk. Avg.	3 mos. Avg.	3 mos. Change
N/A*	95,102	74,576	↓ 1,439

* Daily values are not available for sites ranked outside of the Top 100K.

Where do people go on nstl.gov.cn? (what's this)

- nstl.gov.cn - 43%
- istic.ac.cn - 13%
- mail.istic.ac.cn - 13%
- ati.nstl.gov.cn - 4%
- cdls.nstl.gov.cn - 3%
- nano.nstl.gov.cn - 3%
- food.nstl.gov.cn - 2%
- prep.istic.ac.cn - 2%
- apabi.nstl.gov.cn - 1%
- dangjian.istic.ac.cn - 1%
- vr.nstl.gov.cn - 1%
- netdoc.gov.cn - 1%

(Chart -7)

3.6 Conclusions

The OA movement should be an attempt of practice at largely, which is exploring a suitable way to each country by observing the international treaties. The Chinese OA systems has already seek after some experiences and been in shape primarily, however compared with those famous OA systems, such as Arxiv.org and BioMed, still present some deficiencies as follows:

- The three OA systems in China all belong to Green Road, which is the model of self- archive. There are no OA journals published by them.
- The quantity of academic papers in these three OA systems is relatively limited, and their subject coverage mainly focuses on natural science, especially on physics and computer science. However, the social science and humanities are relatively insufficient.
- Lack of perfect scientific appraisal system, just demanding on the papers' format sometimes, so couldn't control the quality of published scientific studies. However the famous foreign OA systems such as Arxiv and BioMed, have already formed perfect peer-reviewed mechanisms that can ensure the quality of the scientific papers published in their journals.
- These three Chinese OA systems have a little academic impact and still have not been in shape of prestigious brand.
- These three OA systems are still not well known and popular in China. Among the three OA systems, Sciencepaper online is little better than the two others, because it has been put a link to the homepages of several famous internal universities, and on which there are also some introductions, what makes more researchers know about Sciencepaper online.

4. Factors affect OA in China

Up to now, although some medias, publishers and academic groups, even the governments have began to pay close attention to Open Access and support it in China, however still only a few researchers and academic institutions on some specific subjects research and carry out it in practice. Moreover most of journals don't linked the full-text with Internet directly, and some knowledge projects, which have been funded by the government (such as CNKI, VIP, Wan Fang Data etc.) are all profit projects and have opposed to OA movement.

According to a survey, because of some questions and doubts, most of Chinese scientists still hold a wait-and-see attitude to OA movement nowadays. For instance, how to protect the copyright of their scientific studies? What's the Institutional Policy Mechanism to evaluate the scientific research capability? And who will finance the action?

Moreover, as a public career, OA has met some problems in the practice. If the publishers provide the scientific papers on no charge, how do they manage the corporations to operation? And the construction of IR systems needs to be invested from time to time, who pay for it? How to control and evaluate the quality of the scientific papers?

Some journals carry out the model of author-payment to take on the running cost presently. Is that viable? Are there any other good ways? If we put OA into practice completely, which means we will break the original trade orders, change the spread ways, reshape the evaluation systems of the traditional journals, what shall we deal with then? All the problems talk above highly impact the implement of OA movement, and hold out OA's development in China.

Under this position, it is not only need the government to make some corresponding policies and increase the investment to support OA, but also the general scientists and the people should concern it deeply and make great effort to promote the implement of OA in China.

5. Some advices and proposals

Since the implement of Open Access in China has been affected by several factors, all the society should concern and support it. Today OA's sustainable development should have been provided a positive policy environment and enough research fund, so that all the people can available the information resource through open access online archives conveniently.

5.1 Policy aspect

(1) Require all the higher education institutions, research institutes and funding agencies to carry out the OA movement in their local organizations. Encourage them to establish individually or jointly the necessary open access online archives in which researchers can deposit copies of their publications for free access on the Internet. Require all publicly support researchers to retain the right to archive in local institutional and specified public repositories archive in local institutional and specified public repositories and to provide

public access;

(2) Encouraging the scientists to publish their scientific studies on high quality OA journals and repositories. Accept author charges as research project expenditure when researchers publish their studies in open access journals which charge author charges on accepted articles;

(3) Adjust current scientific evaluation model and systems, and encourage OA publishing, support the self-archiving. Consider the value of the scientific studies itself, but not the value of published journals;

(4) Adjust the copyright protocol, require the publishers agree scientists retain the right to deposit e-prints in local institutional and specified public repositories and to provide public access;

(5) Support the publication and management process of OA journals by makes the related policy and increases the investment. According to the present publishing status in China, we shall do as follows. For one thing, encourage the traditional journal publishers to change their publishing model into open access, and this action should be given some proper financial assistance by the government. For another, based on several specific subjects, establish some high quality OA journals funded by government, and look for the suitable and practicable OA publishing and management process in China.

5.2 Application aspect

(1) OA system Software

There is a little software suitable for OA at present. We should choose those open resource software to decrease the expenditure.

(2) Explore integrated OA searching technology, and supply the uniform searching entry that conformity with the main search engines.

Open access can be looked as a distribution system of data supplying. It is inconvenient to users if the knowledge repositories are diversity just because the high education institutes and research organizations want to show their individuation. For users, it's better to search IR by a uniform entry or one-stop searching. In fact, users would like to use the main search engines and to obtain full-text for no charge. For example, according to an investigation, approximately 65% users get papers in DOAJ by Google now.

5.3 Popularizations and Spread

(1) Library

- Promote and support the open access mechanism, and implement the OA service.
- Develop OA resource training programs to promote more and better usage of OA resources
- Recommend high quality OA journals and have them linked with OPAC.

(2) Professional and Popular Medias

-Create an OA-supporting environment.

-Propagandize for open access to all the mass and scientists, strengthen their concerns and understands about OA and eliminate their doubts and questions.

(3) Students

-Cultivate students' habit of using OA archives. Students are the coming scientists who will promote the academic communication by the network in the future. But also they grow up in IT age, which are the potential supporters and promoters to OA movement. The better they know and understand about OA, the better OA can get sustainable development in China.

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