

# Eliminate gaps in the distribution of academic information

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## Introduction

Over the past decade, The Chemical Society of Japan has enhanced its services to the contributors and readers of its journals, including through digitalization. At present, the Society takes pride in being at a level comparable with the world's first-class journals. However, the environment surrounding researchers has been steadily and rapidly moving towards a competitive society—for example, an increase in competitive research funds, priority allocation of research funds, open recruitment of faculty members and incorporation of universities. The time has already come when researchers planning to contribute treatises have to select publishers, giving priority not to a publisher's services or nationality but to the external reputation of the journal—that is, its status. Due to this situation, the Society's delayed self-help efforts have not heightened the relative status of its journals.

This hierarchy of journals has clarified the qualitative differences among publishers and accelerated an oligopoly in the publishing industry. On the other hand, some subscribers have begun to form library consortiums or, as in Canada, national consortiums. This indicates that transactions concerning academic journals have become big business. In this situation, it may be no exaggeration to say that Japanese academic publishing businesses that publish one or two journals have been losing the foundation for their existence.

Although, in the Third Phase of the Science and Technology Basic Plan, strengthening of Japan's capacity to distribute academic information throughout the world is counted as a role of learned societies, this goal is unlikely to be accomplished by 2010, the final year

of the plan. Rather it is highly likely that exactly the opposite will be the case. Consequently, the situation will continue where most of the results of research financed by the taxpayer money flows out to overseas publishers together with the copyrights to them, while Japanese libraries buy most of them back again with taxpayer money. It seems hard for taxpayers to understand this.

## Widening information gaps

Some researchers think it most important to be able to readily and smoothly publish their research results throughout the world. Nationality of the publisher does not matter to them. If there are countries that are good at publishing works, they will entrust these countries with the publication of their treatises. Many researchers also think that because the expenses for books are minor compared with the value of the information that can be obtained and there are only a few countries in which academic societies can gain profits from journals, most nations make their research results available free of charge without concern for such things. On behalf of such researchers, however, I would like to present one more issue.

In the past few years, I have pointed out at every opportunity that the information gaps among research institutes have become wider as time passes. A sharp rise in the prices of journals has resulted in a significant reduction in the number of titles of journals that libraries in Japan are purchasing. This sharp rise has impacted small universities and research institutes in particular. Although it is said that the number of titles of journals has increased in large research institutes because of the popularization of the umbrella agreement called the "Big Deal," I have heard that the number of ti-

ties that small universities which cannot cover the cost has been declining because, under the Big Deal, the total amount of payment does not decrease even if the unit price per title falls. As a result, researchers at small universities have been excluded from most of the necessary academic information.

As readers, researchers wish to obtain the information they need, and as authors, they hope that their works will be read by as many readers as possible. Although the publishers should have been commissioned by the authors, by what right have they excluded small research institutes from academic information?

The digitalization of information conveyed through radio, television and the Internet has always promoted the communication of information and reduced the information gaps among various regions. With regard to academic information, however, digitalization has widened information gaps. This is because publishers persist in the business style of the era of books without using the real advantages of digitalization. Now that digital versions are the main means for users to obtain academic information, is there any necessity for concluding an agreement on each title as in the era of books? I do not think it reasonable to have to purchase an annual subscription when the reader wants to read only one paper in a title.

## NIH open access

In 2004 the NIH (National Institute of Health), a US organization that provides research funds, came out with an open access policy. Under this policy, the NIH developed the idea that it was unreasonable for taxpayers to be unable to freely access the results of research financed

by tax revenues. I seem to recall that, discussion was made whether terminal cancer patients could come to know of new treatment methods. In line with this policy, NIH announced that the results of all the research financed by the NIH should be made available free of charge on the scientific literature platform called "PubMed." As a result of various discussions, it was provisionally decided to place a moratorium of up to 12 months from the publication date. I think that the NIH view from the standpoint of taxpayers is basically right. However, the NIH has committed one important mistake: the decision that published work should be available to the users "free of charge." Usually, after a manuscript is submitted by the author, it is carefully read by a referee and judged, corrected and otherwise processed by editors to assure the quality of the information. In the case of the journals of the Chemical Society of Japan, the cost of these processes for a single submission is about 250,000 yen in the form of a full paper and about 80,000 yen in the form of a letter. Because these processes are absolutely essential for the management of the quality of the information, someone has to bear the cost. Since the NIH decided that published work should be made available free of charge, there is no other way than having the author bear the cost, unless there are other sources of finance. As described above however, now that authors are desperately trying to gain a higher reputation, I do not think that journals that mainly depend on revenues from the authors can achieve a high status among the readers. In addition, the fact that the authors usually decide where to contribute their work has made the "author-pays" model disadvantageous. Compensation for this mistake is the 12-month moratorium on making published results available free of charge. This is meaningless as exemplified by the case of a terminal cancer patient wanting information, and the NIH model has not been subsequently extended.

### Pay-as-you-go umbrella agreement

I think that room should be left for the "reader-pays" model since the results of research financed from tax revenues should be available to taxpayers at a rea-

sonable price. Basically a reasonable price is the total amount of the cost of processing a treatise and an appropriate profit. As mentioned above, it cannot be said to be reasonable to subscribe to one year of issues of a journal in order to read only one paper.

Basically, payment for a digital version arranged between the publisher and a library should be made not per title but per article. That is, the library should pay the product of a predetermined unit price times the number of accesses or downloads. It is natural for the unit price to differ among titles and it is inevitable that small differences will arise in the unit price between libraries with many users and libraries with a few users. If a small library concludes a pay-as-you-go umbrella agreement with a publisher, basically it can add the same number of titles as a large library. There will be no difference in the number of titles, and only the difference in the number of users will remain. For want of space, I have to omit explanations about the relationship between this pay-as-you-go umbrella agreement and the already existing system of selling articles called "pay-per-view" and about what form the agreement should take. If you have interest in this, see the reference<sup>1)</sup>. In any case, publishers should make efforts to lower the unit price by establishing various options for the form of agreement and securing as many readers as possible.

The Chemical Society of Japan is also a publisher of journals. If I appreciate the advantages of a pay-as-you-go agreement, it is inevitable that the question will arise as to why the Society does not take the leadership in adopting the pay-as-you-go system for its journals. However, it is regrettable that the Society cannot adopt it. The method of payment in advance per title, which we have adopted up to now, is like a narcotic: once a reader concludes an agreement and pays the one year subscription beforehand, the reader can read as many treatises as he or she likes seemingly free of charge—that is, without paying any additional charge, however high the unit price the reader has to pay per access as a result. Think what would happen if there exist one or two journals for which the pay-as-you-go system is adopted. Most of the users will preferentially use

the journals for which they have already paid the subscription fees. Therefore, the introduction of the pay-as-you-go system requires a certain restriction on the existing system of contracting per title. When a library requests a publisher to conclude a pay-as-you-go agreement, the library needs to be supported by the government's strong position that *the results of research financed by taxes must not be contributed to any journal that taxpayers cannot use at a reasonable price.*

### Conclusion

In December 2004, the President's Council on Innovation and Competitiveness in the US issued a report called "Innovate America," which declared that the US will optimize their entire society for innovation in the next 25 years. In this report, it is stated that importance should be placed on small firms. Certainly, small firms have frequently developed innovative technologies that large firms could not have developed. It is also clear that the current system of distributing academic information, which concentrates academic information in large and well funded universities and companies, is not suitable for the era of innovation. When I talked with IUPAC President, Prof. Jung-il Jin, in Seoul in November last year, I pointed out this as one of the problems to be addressed by IUPAC. I think that such international organizations as ICSU, IUPAC and IUPAP should address the problem that the current system of distributing academic information is not suitable for an era of innovation.

- 1) Teruto OHTA, Information Management 2009, 51, 924.

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