Is the Electronic Information Industry a Threat to Conventional Publishing?— An Interview with Kinokuniya Ltd., a Leading Japanese Bookseller and Information Company

A scientist may be defined as a person trained in the scientific method. But a more pragmatic definition of a scientist is one who publishes scientific papers. The working research scientist therefore lives in the inseparable worlds of science and publishing. Among other things, the symbiotic relationship between these two worlds is affected by economics. When research budgets are cut, libraries reduce budgets for journals. As a consequence, publishers may have to eliminate marginal journals. Scientists then find there are fewer outlets for disseminating their work.

Some people feel that electronic publishing can provide a "solution" to this dilemma. So it is natural that some publishers feel that traditional print journals may be undermined by the new medium. While certain traditional publishers are justifiably fearful of the electronic revolution, most realize that the new technologies provide new opportunities. For example, computerized composition has made it possible for many journals to reduce the cost of publication.

On a recent trip to Japan, I was asked to comment on the problems and challenges facing scientific publishers. I was interviewed by a journalist working on behalf of Kinokuniya Ltd., one of the largest booksellers in Japan. The interview is reprinted on the following pages.

Kinokuniya is one of the most progressive representatives of foreign publishers in Japan. They are in fact one of the firms that have represented and marketed ISI® products and services in Japan for many years. The booklet from which this interview is reprinted is typical of the high professional standards they set.[1]

U.S. Asiatic Company Ltd., our other agent in Japan, also represents our services with great professional skill. The diligent and skilled marketing techniques employed by Kinokuniya and U.S. Asiatic Company have made ISI well known to scientists, librarians, and administrators throughout Japan.   © 1983 ISI
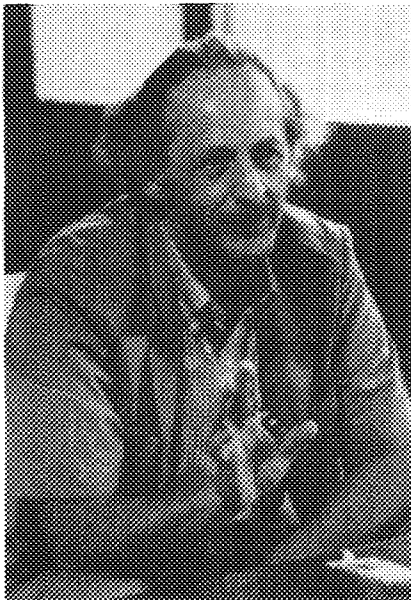
REFERENCE

1. *The Kinokuniya way.* Tokyo: Kinokuniya Company Ltd., September 1982. 20 p.

"Electronic delivery will open new markets for publishers who apply new technologies to satisfy developing needs."

An interview with Dr. Eugene Garfield, President, Institute for Scientific Information

Dr. Eugene Garfield
President, Institute for
Scientific Information

paperless journals. A modest amount of progress has been made in testing the feasibility of such systems. But even in the most advanced systems for storing the entire texts of articles in chemistry or physics, there is not yet a hint of eliminating the printed journals from which the electronic versions are made in the first place. Don't underestimate the technical problems involved. This may change if the cost of paper and postage escalates even more rapidly than in the past few decades. But for now it is still more efficient to deliver packages of highly relevant information on paper than it is to deliver that much information electronically.

by Susan Murata

Dr. Eugene Garfield is an internationally recognized pioneer in the information systems field. He is the founder and president of the Institute for Scientific Information in Philadelphia, which develops and markets computer-based information services. On a recent trip to China, Dr. Garfield stopped in Japan and talked with Kinokuniya about his work and his views of the Japanese market for STM [scientific, technical, and medical] publications.

Do you perceive the emerging electronic information industry as a potential threat to conventional publishing?

There is a great deal of speculation about the future paperless society including

Why do you believe printed media will continue to exist?

Scanning on video display units is technically possible right now, but it does not take into account the real shortcomings of video display units for prolonged reading purposes. It also ignores the realities of typographical and other aesthetic considerations that make scanning pleasant. In the foreseeable future, perhaps in five to ten years, flatbed portable screens may become commercially available. That may make it possible to substitute the printed page with electronic images. However, most of us will continue to browse on planes and other places where electronic access, even if developed to perfection, will not be readily available.

What can publishers do to adopt electronic information systems to their advantage?

Many of the systems that emerge will require considerable sophistication in their use. So the information industry will face a real "education" problem. While I think society as a whole has become very information conscious, unfortunately, it is not yet information-literate. An "information-literate" is a person who knows the techniques and skills for using information tools in molding solutions to problems.

It will be enlightened self-interest for publishers to help larger segments of society become information-literate. To do this publishers will have to become involved in curriculum planning activities, give advice to governmental bodies which control educational programs, and perhaps play an active role in educating the public themselves. The objective, of course, is to create a large pool of people who will want more and more information in a wide variety of areas, thereby increasing demand for publishers' output.

People are conscious of information today because they are frustrated when they can't get the information they need. Electronic delivery will help open new markets for publishers who are flexible enough to apply the new technologies to satisfy developing needs.

The key is to condense information, and produce ways of digesting it that will reduce reading time. Abstracts aren't enough. The researcher requires encyclopedic information, that is, comprehensive reviews of relevant literature.

What would an information-literate society be like?

When people in all parts of society have rapid access to the information they want, we can say that the information conscious society has become the information society. Reduction in the cost and size of computers will accelerate the process. Of course, developments will depend on the technology available commercially. As memory becomes cheaper, it might be more economical to duplicate rather than centrally store certain kinds of information. With such duplication a centralized World Brain wouldn't be necessary at all. This

kind of decentralization would prevent government or industry from obtaining a monopoly on the flow of information.

Once large numbers of people have computers at home, we can expect them to have a great impact on education. It may be possible for people to continue being educated until the day they die. Many people will no doubt become self-taught in many subjects before their old age.

The physically handicapped or shut-ins stand to benefit greatly from developments such as home journals. They could receive information about books, magazines or journal articles, and audiovisual materials through home terminals. Conceivably, home terminals could give them the information they need to order hard copies through conventional or electronic mail.

Home terminals could provide access to legal and medical information. This would certainly be a boon for everyone regardless of economic level. Women and minorities could use the legal information to help combat job discrimination. As for medicine, people may have access to enough information to treat simple diseases, or take steps to prevent major ones like heart disease or cancer.

Publishers are in an ideal position to provide these services since they already control much of the information desired. If publishers lose these opportunities to other entrepreneurs it will most likely be because they are too busy trying to "protect" their traditional markets and products instead of pursuing the opportunities.

What problems are likely to emerge, or perhaps are already emerging, as the use of electronic information sources becomes more widespread? How might these problems be remedied?

We can expect many problems, of course. Librarians are going to face challenges adapting to the increased availability of au-

diovisual materials. They will have to meet an increasing demand for video cassettes, for example. They will have to make room for private and public viewing of cassettes, and determine whether cassettes should be circulated.

Electromagnetic pollution is another major problem. The US National Bureau of Standards says that in the US there are over 8,000 radio stations, 900 television stations, 30 million citizens' band or CB radios, and 35 million industrial radio sources. There have been reports of the disruption of many electronic devices, from heart pacemakers to household toasters and televisions. Electromagnetic pollution is obviously not completely the fault of the information community, and its solution does not lie in our hands alone. But our telecommunications systems are going to be a source of this pollution, and our computers may be affected by it. So it may be time to start thinking how to cope with it.

Regimentation and lack of privacy are other problems we may face. We have student IDs, driver's licenses and credit cards. Possibly all these different cards we carry around could be combined into a universal ID card. Such a universal ID card may represent a great convenience. But it may also pave the way to invasion of privacy since so much information about you may be accessible to so many.

What should publishers do to counteract the negative effects of electronic information?

Publishers will have to take an active role in dealing with these problems. They will have to become more active in lobbying to protect their own rights as well as those of citizens who come in contact with their products and services. They will also have to be concerned about the potential hazards to the physical and mental health of their customers that could possibly be af-fected by publishers' products and services. While there doesn't appear to be a serious danger, this must be monitored and studied. Certainly the publisher has a responsibility to minimize risks to users of their systems.

What is your view of the Japanese market?

The Japanese consume an enormous amount of information. There is something about the Japanese culture which seems to foster this. I see two major problems in trying to sell in Japan. The language problem, for one, is a significant one, but not insurmountable. The greater and more immediate problem is Japan's unique information distribution system. Unlike the US, there are always middlemen standing between the publisher and the customer. However, when you have a highly sophisticated STM publication, you need a special marketing system. In Japan this means working closely with the established booksellers. They know the methods and types of approach that are effective. Most customers prefer dealing with a familiar intermediary. To overcome these problems we need more cooperation among the Japanese booksellers in the promotion of our products.

How do you regard the future of the information industry?

I think most of us are optimistic about the future. The future holds a great deal of excitement and fascination for all of us. I suggest that in the area of fundamental understanding of the basic laws of information science we have not progressed as far as we had expected since I entered this field about 25 years ago. Perhaps, like so many other areas of human endeavor, we have a better understanding of our ignorance. ■