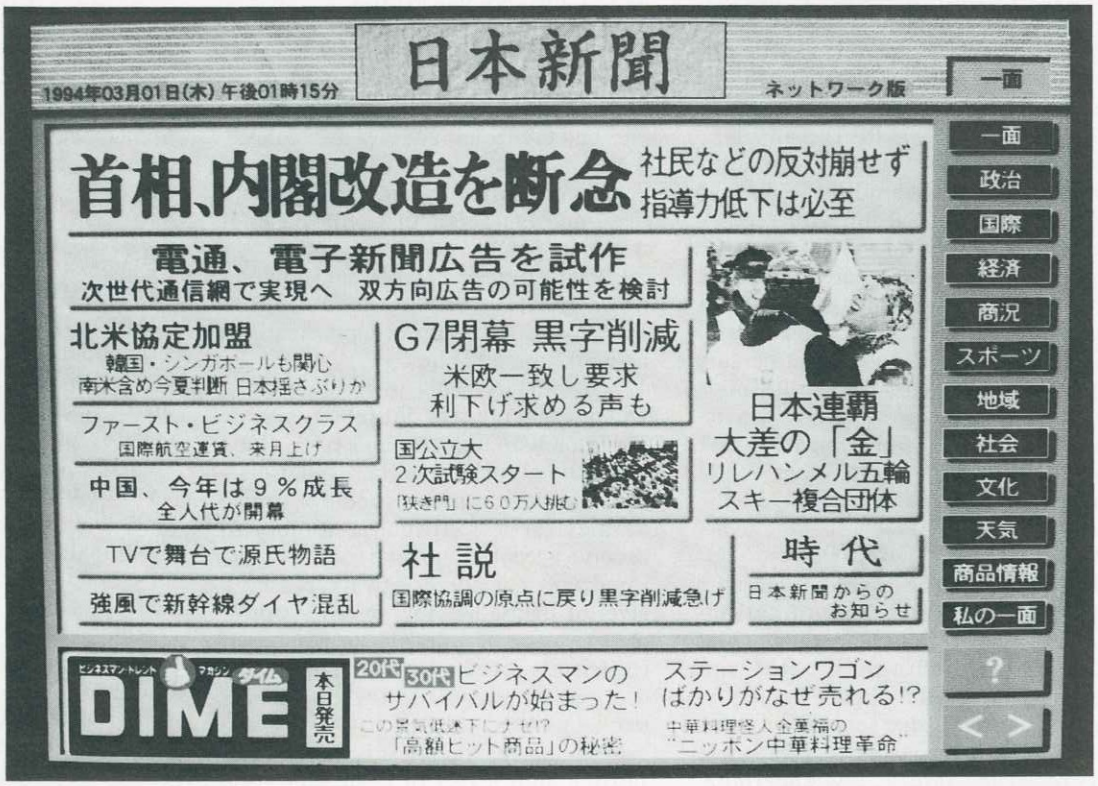
Multimedia in Japan Today and Tomorrow

By Iwasaki Ieo

The mass media in Japan is placing heavy coverage on information about multimedia. Seminars, symposia, and expositions on this theme are being held with incredible frequency and numerous books, ranging from educational primers to fairly specialized works, are being published. To say that Japan is now in the midst of multimedia fever is indeed no exaggeration.

The video game equipment sector is also looking ahead by putting a steady stream of CD-ROM players, designed for the future multimedia age, on the market. Companies are employing animation compression technologies in the production of all of these game machines, whose high functionality, designed for the multimedia era, is used as a selling point.



Experimental electronic newspaper by Dentsu

Appliance manufacturers are also selling home video CD players with simple, built-in interactive functions while personal computers equipped with CD-ROM drives, or, "multimedia PCs," that have recently entered the market are becoming the mainstream type of equipment.

The direct impetus for this multimedia boom was Vice President Al Gore's announcement in September 1993 of an action plan for the construction of an "information superhighway" that would use new infrastructure to raise educational, medical, and other social welfare levels by the year 2010. This had a tremendous impact on Japan. The average person had considered multimedia something indistinct and in the distant future, but it had suddenly begun to take shape in Japan.

The U.S. National Information Infrastructure (NII) program, with its focus on the construction of an information superhighway using fiber optics, is a move to achieve a multimedia society through a four-phased approach: telephone networks (switching the phone grid over to fiber optics), CATV (Community Antenna Television —granting permission for telecommunications operations), computer telecommunications networks (promoting multimedia communications circuits over the Internet), and wireless communications.

In comparison, Nippon Telegraph and Telephone's (NTT) Broadband Integrated Service Digital Network (B-ISDN) is the only data communications infrastructure that might conceivably contribute to the achievement of a multimedia society in Japan at this point, and it is scheduled for completion in 2015.

Further, looking at the distribution of CATV, assumed to be an extremely important aspect of the infrastructure in the U.S. NII plan, Japan lags comparatively far behind the U.S. Seen by percentage of subscriber households, Japan had 3.1% at the end of March 1993 compared to 61.5% at the end of 1992 in the U.S. Also, seen by potential subscriber households, it was 19% in Japan as opposed to 96% in the U.S. (from a

Ministry of Posts and Telecommuications survey comparison of CATV in Japan and the U.S.).

Also according to an Economic Planning Agency consumer trends survey for Japan and Dentsu Research estimates for the U.S., there is a wide disparity in the rate of distribution of household PCs, with 13.9% in Japan compared to 30.5% in the U.S. in 1993.

As can be seen, Japan is currently a number of steps behind the U.S. with regard to basic social infrastructure for multimedia, but if in the future Japan proceeds down the road toward an advanced information network society, multimedia and peripheral businesses will undoubtedly be core 21st century Japanese industries. We should note, however, that infrastructure will naturally be required for multimedia to take root in Japan and several other conditions must be met as well.

Conditions for progress

In May 1994 the MOPT released a report by the Telecommunications Council, "Basic Data Communications Infrastructure Program: Reforms Designed for the Intelligent Society of the 21st Century," that sets forth a grand design for the provision of a Japanese version of the information superhighway. Moves toward deregulation and administrative reviews have rapidly picked up steam since this report's release.

This program sets 2010 as the target completion date, with preparations in terms of both area and functions, commencing in large urban areas to provide incremental bases for data telecommunications.

Further, multimedia is one of the major themes taken up in MOPT's "White Paper on Telecommunications 1994," which notes the following points based upon the results of a survey regarding conditions that must be met for progress in multimedia:

1. Design of a program to provide a new data communications infrastructure for the 21st century;
2. Provision of high-speed, high-capacity fiber optics cable and other data communications infrastructure;
3. Development of human interfaces that are easy for everyone to use;
4. Development of need-based applications;
5. Put intellectual property rights in order for trouble-free software use;
6. Preparation of systems for various societal sectors;
7. Reductions in telecommunications fees and preparation of cost schedules;
8. Cut the cost of home-use terminals;
9. Changes in common social perceptions and the belief that only paper is reliable;
10. Protection of privacy and maintenance of data security;
11. Ensure that data communications networks are reliable;
12. Creation of media environments that will not shut out less skillful users;
13. Establish etiquette and rules along with mutual social rules between users.

While these various conditions must be met for a multimedia society to become accepted and take root, it is also important for society to have a high level of media literacy. In other words, the existence of an adequate number of sufficiently "media literate" multimedia users is a prerequisite for multimedia market growth.

From that standpoint it is thought that Japan's high levels of basic education will work in its favor, but there is a further need to raise multimedia literacy by undertaking education in multimedia applications on all social levels, including worker retraining within companies. This is particularly important in scholastic education.

Keio University's Shonan-Fujisawa campus merits attention for a precedent-setting experiment. Students can use the media center on Keio University's Shonan-Fujisawa campus, outfitted with PCs, workstations, and audio-visual equipment from a number of manufacturers, 24-hours a day and the system is set up so that students can all exchange information by electronic mail.

Various tests are also being conducted with PC communications in the arena of primary school education. In their information class Yamanashi University Elementary School students use the Internet to exchange electronic mail with overseas elementary schools. Rinkan Elementary School in Yamato, Kanagawa Prefecture is jointly creating Japanese and American stories with Lakeview Elementary School in Lincoln, Nebraska. Although still few, schools in many locales are conducting eager experiments.

The Ministry of Education has also implemented research and development pertaining to software for use in studies as a centerpiece project for fiscal 1994.

Infrastructure and outlook; NTT's master plan

Around 1992 there was much discussion about the provision of new social capital in Japan, but this occurred as a direct result of the aftereffects of the collapse of the "bubble" and the recession that hit the information industry. Central to these discussions was the form that new social capital employing multimedia technology suitable for an advanced information society would take.

Among these, the idea of developing a data communications infrastructure that would form a new national axis for an advanced information society attracted considerable attention.

In January 1994 NTT announced a business blueprint entitled, "NTT Multimedia Master Plan and Immediate, Specific Measures." The following points were raised:

1. Maintenance of and improvements to universal telephone services;
2. Promotion of cooperation and link-ups between information providers (IP), manufacturers, and users to strive for a shift from offering services based on networks to services based upon customer choice, with the focus on user systems;
3. Promote menus of customized network services;
4. Provide competitive conditions and review fee schedules;
5. Create open, advanced networks;
6. Maintain technical development capabilities;
7. Strengthen link-ups with business partners to adapt to globalization.

NTT also unveiled an action plan,

outlining the following immediate, specific steps:

1. Establishment of a "Multimedia Promotion Group" (in February 1994) to strengthen multimedia promotion systems;
2. Testing of high speed, broadband backbone networks (September 1994);
3. Testing of multimedia services for ordinary households—provision of circuits to CATV companies, video on demand (scheduled for January 1995);
4. Reductions in optical access grid costs to attain costs equivalent to existing metal wire by around 2000-2005;
5. Development of new nodes with built-in ATM technology (begin introducing new nodes in 1998, with complete cut-over scheduled for 2015).

It should be noted that the full CATV services being promoted by MOPT involve the creation of CATV networks to replace NTT's monopoly on local networks and there is concern regarding the issue of conflicting advantages and disadvantages between CATV and NTT's next generation network master plan based upon B-ISDN. On the other hand, NTT plans joint video on demand tests with CATV companies.

Private multimedia efforts

The preceding shows that Japan seems to have been spurred by the U.S. NII plan and is quickly moving toward the commercialization of multimedia. In reality, however, this trend can be said to be an extension of organizations' and companies' steady efforts to produce practical multimedia applications. In any event, it is certain that the U.S. information superhighway plan played a role similar to that of Admiral Perry's "black ships."

One example of a steady, private level approach is Fujitsu's "Video on Demand Business Trip Reports." Originally based on a report on a business trip to a communications equipment fair held in Singapore, its test manufacturing employed Fujitsu's proprietary image compression technology. With the addition of editing software now under development at the company that permits simple cutting and pasting of video animation, the company will be able to market a multimedia product that is practical and easy to use.

There are high expectations for the use of multimedia technology in the medical and welfare services sector and Secom's "Hospinet" is one practical example in this field. This system employs ISDN to provide image diagnostic support services for medical uses, with specialists offering image diagnostics consultations based upon magnetic resonance imaging and computerized tomography images sent from medical facilities that have contracted for the services.

Practical electronic newspapers, CD-ROM magazines, and other media applications for the new multimedia age are now also being developed in Japan. Japanese newspaper companies in particular, concerned with pressures from sales costs, are all beginning to investigate the technical possibilities of multimedia newspapers. Following the *Asahi Shinbun*'s establishment of a multimedia investigative committee in February 1994, the *Mainichi Shinbun* formed a multimedia committee in March. All the other newspaper organizations have also begun to move.

Ad agency Dentsu responded to these moves by creating and unveiling a test 1994 electronic newspaper (see photo). Nonetheless, even if these electronic newspapers become practical and completely replace newspapers in their current form it probably will not happen until after the completion of the Japanese version of the information superhighway.

Interactive TV shopping possibilities

With advances in multimedia, distribution is one industry in which especially sweeping changes are foreseen, particularly in the area of interactive TV shopping.

For the time being CATV networks will form the infrastructure base for interactive TV shopping, but, as noted above, the 3.1% ratio of urban CATV subscriber households in Japan is markedly lower in comparison than the U.S. Moreover, these are not all receiving multiple channels through home terminals. Instead, nearly 40% are limited to receipt of retransmission of ground-based TV signals. In other words, urban CATV's distribution ratio is no more than a bit less than 2%.

Further, the total number of receiving households per facility does not exceed an average of 7,180, with 100,000 households for Japan's largest station, Nihon Network Service in Kofu, a huge disparity compared with America's largest company, Telecommunication Corporation, with 10 million households.

Japan's catalog shopping is now said to be in a growth stage, but fiscal year 1992 (ending March 1993) sales of ¥1.84 trillion (according to the Japan Direct Marketing Association) were no more than 1.3% of total domestic retail sales of ¥142 trillion during the same period, still amounting to no more than one-seventh the size of the U.S. direct sales market, which makes up 6.2% of the retail market at $130 billion.

There is also a large gap between Japan and the U.S. in the TV shopping sector. It is estimated that annual TV shopping sales in Japan come to about ¥60 billion, still quite a bit different from the U.S. where just two cable TV shopping channels, QVC and Home Shopping Network, have annual sales exceeding $2.2 billion.

However, even in these circumstances it is true that this is the only growth sector in a retail industry that is sluggish on the whole.

In addition, various experiments related to multimedia are also being tried. A new version of home shopping by satellite transmission combined with the Internet being planned by a leading volume appliance merchandiser, Dai-Ichi (of Hiroshima), is one of these.

Iwasaki Ieo works at the corporate communications division of Dentsu Inc. He also serves as an instructor and research fellow at the Institute of Mass Communication of Komazawa University in Tokyo.