

The Japanese Digital World in 1999 (1)

Current status and problems of the digital world

By Iwasaki Ieo

Paradigm shift to 21st-century systems

The framework that has molded 20th-century industrial society is about to undergo a dramatic transformation. This represents a paradigm shift to a post-industrial society that is characterized as an advanced information network society.

Today, phenomenal progress in information/communications technologies has started allowing moves toward an advanced information network society to assume a concrete shape rapidly.

During the past several years in particular, an accelerating dissemination and expansion of the Internet has combined with rapid evolution in the technology of utilizing the Internet to bring an advanced information network society into being before the advent of the 21st century.

Daniel Bell described two points — “a shift from material things to services” and “the fact that technological innovation and changes can be achieved for the first time by the systematization of theoretical knowledge” — as characterizing the post-industrial society. As regards services in the post-industrial society in particular, he pointed out that greater priority will be placed on personal and specialized services than on services supplementary to the production of goods in the industrial society.

In the advanced information network society, the economic value of information will count in addition to material things and services. This means, in other words, that a furtherance of welfare will become the goal of the advanced information network society through an optimum distribution of material things, services and information.

Another characteristic of the advanced information network society is the evolution of borderless corporate activities. Progress in information/communications technologies and mass transport systems prompted the globalization of corporate activities, and gave birth to multinational corporations. In recent years, multinational corporate activities (to grow into supranational enterprises) have been globalized yet further and local corporate operations are being globalized, as a result of information/communications technologies and their rapid dissemination on a global scale. More specifically, with the widespread use of the Internet for commercial purposes, corporate activities are expanding globally and borderlessly irrespective of their scale. Under such circumstances, a variety of systems and plans formed within the framework of national economies began exposing inconsistencies as corporate activities developed in a borderless fashion.

Post-bubble Japanese society is maturing as a consumer society, but it is plagued by serious problems, such as a

relative hollowing-out of Japanese industry due to the rapid economic development of Asian nations and a resulting shift of domestic production bases to these countries, the fast graying of society and a predictable decrease in the working population (aged 18 to 60).

The *raison d'être* of the framework of Japanese corporate society, such as the lifetime employment system, seniority-based wage system and in-house unions, that had led postwar Japan to economic prosperity, is being questioned with the collapse of the Cold-War structure, which had shaped the framework of postwar global politics, and the 1955 system in Japan.

At this time, when 20th century-type industrial society, based on a mass consumer society, is about to undergo a wholesale transformation, the mass media, which have shored up the mechanisms of mass production, mass consumption and mass communications that underlie industrial society, are approaching a crucial turning point owing to progress in digitalization.

[Rate of broadcast digitalization and number of channels in 2010]

■ CATV		
Dissemination rate		:60%
Digitalization rate		:100%
No. of channels		:200-250
■ Satellite broadcasts		
Dissemination rate		:85%
Digitalization rate		:100%
No. of channels		:400-600
■ Terrestrial broadcasts		
Dissemination rate		:100%
Digitalization rate (roughly)		:100%
No. of channels		:20-30

Source: Ministry of Posts and Telecommunications, “Vision on Broadcast Sophistication (Interim Report)”

The basic functions of the mass media will probably remain unchanged even if the advanced information network society evolves. In addition, it is expected that with interactive and networking functions added, the mass media will attain more powerful development, though in considerably different forms from the current ones.

Most likely, publishing, broadcasting and communications will be integrated to form entirely new media. It may be

said that on-line magazines, and newspapers, and the like, being experimented with on the Internet, are the prototype of such new media.

More specifically, in 21st century society, the digitalized mass media and the Internet will be integrated, and a new info-communications platform (multimedia), endowed with interactive, network and digital characteristics, will play a leading role in forming a new socioeconomic structure.

Opened Pandora's box

In the 20th century, modernism-based science and technology, and industrialism attained their zenith, enabling an advanced mass consumer society to penetrate into industrially developed regions worldwide. And the next millennium is going to begin with the approach of the end of the century's last decade, the 1990s.

At this juncture, corporate activities, supported by global information networks and the unrestricted flows of money, people and goods, are expanding beyond the modernism-based framework to become supernational.

This trend has been becoming more and more widespread since the Cold War structure, which had existed for nearly half a century since the end of World War II, crumbled in the early 1990s.

The collapse of the Cold-War structure was occasioned by the disintegration of socialist-bloc nations from within. But what triggered their collapse was the image of "affluent" consumer lives in the capitalist West, beamed across national boundaries to socialist countries via satellite and terrestrial telecasts. From this, it may be said that the borderless power of the radio wave and market economy brought about the downfall of socialist national systems — one of the logical paradigms of modernism-based nations. It goes without saying, of course, that supernational corporate activities and global-information networks are helping to expand the scope of unrestricted activities in the former socialist-bloc countries.

Optimum distribution of information

The global market economy (electronic information-based capitalism), which is supported by the worldwide information network system, ought to be described in terms of supermodernism rather than post-modernism. In electronic information-based capitalism, the optimum distribution of information forms a vital element. In the era of industrial capitalism in the 20th century, the distribution of labor (technology) and resources/capital (people, goods and money) posed an important question, but in a supermodern world, information is added to this as an element of supreme importance. And for information to be useful, it is premised by the presence of global network systems that enable its instantaneous transmission, retrieval and exchange.

Today, the world is encircled by a great diversity of electronic information networks, ranging from open networks like the Internet, to closed intercompany

networks. And competition for leadership in info-communications networks is growing more and more intensive.

Electronic community and global standards

Professor Nicholas Negroponte of the MIT Media Laboratory says, "Many of the nation-state values lose their luster as we promote mutual communications. What will become important instead of such values are values in a larger electronic community and, conversely, those in a smaller electronic community." (From *Being Digital* by N. Negroponte).

An electronic community, represented as the ideal of supernationalism (globalism), is a multicultural world based on democracy and liberalism. It is a society of fair competition in which anyone can participate, and it must have global standards that satisfy everybody. There, information is distributed in an optimum way, achieving the maximum social effect. This is the ideal image of what Professor Negroponte portrays as an electronic community.

There are four conditions whereby the optimum distribution of information will bring about the maximum social effect:

1. Universal service systems are available all the time, anywhere and for anyone.
2. Presence of consumers with adequate media literacy.
3. Attainment of a well-balanced distribution of goods, services and information.
4. Presence of an open business environment.

In the United States, however, where digital socialization is in progress ahead of Japan and Europe, there have developed issues, such as a widening information gap, the presence of citizens turning their backs on information (that stems from a slant in the capacity of handling information according to age groups), a variety of problems emerging from unfamiliarity with interactive communications (through failure to give full scope to interactive functions, etc.) and a partial distribution of goods, services and information (a widening income gap arising from the capacity of handling information).

Steps to counter 21st-century "Black Ships"

Today, two "Black Ships" — globalization (finance / distribution / information) "Big Bangs" and advanced information networking — have surged to the shores of Japan, which is beginning to reel from the post-bubble body blow. In other words, Japan is in a state of chaos comparable to the tumultuous closing days of the Tokugawa shogunate.

At the time of the Meiji Restoration, men from the former provincial clans became leaders of the new age. For employees of big business, however, an era of global standards may become too harsh because they do not have an enterprising spirit, know-how of starting businesses and a spirit of independence.

Viewed in this context, it may be said that Japan faces today a much more difficult situation than in the last days of the Tokugawa government. But the present age is different from those days in that the nation has the world's cutting-edge technological and marketing capabilities in some manufacturing sectors, and a large accumulation of capital, in addition to small and medium-sized enterprises, which have in the past shored up manufacturing, attaining fairly high technological levels. Again, there is no denying that the country has many companies boasting high levels of expertise in the information-technology field.

Expectations for the info-communications industry

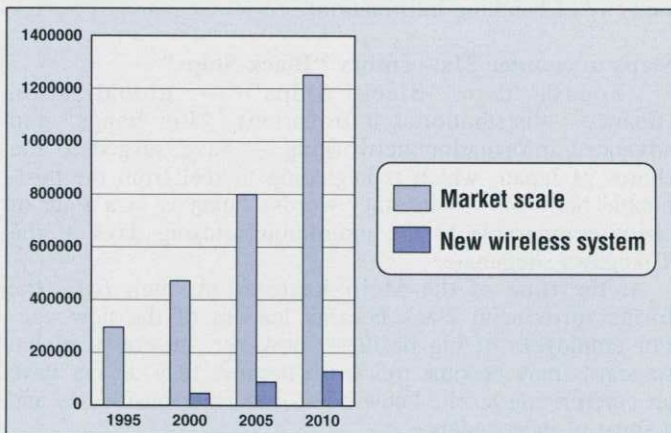
With the 21st century just around the corner, Japan has many issues to resolve such as the global environment, the rapid graying of society, the loss of economic vitality after the bursting of the bubble, the globalization of economic systems and how to adapt to financial reform and unemployment, which is growing in the midst of the lingering recession.

It is definitely no overstatement to say that one of the important solutions to these problems hinges on the success of the info-communications industry, which is expected (in the overview of "A Vision on Info-communications," Ministry of Posts and Telecommunications) to generate demand worth 125 trillion yen in 2010 and create new job opportunities for 2.24 million people.

In the 21st century, the socialization of advanced information networks and the globalization of economic activities will make further progress to make the info-communications industry a keystone of competitiveness.

To vitalize Japan's info-communications industry, it is important, first and foremost, for companies in the private sector to play a key role, and this is premised by the consolidation of a powerful administrative system supporting them, along with the construction of new infrastructures and provision of systems finance new projects and new businesses.

[Market scale of info-communications services]



(Unit: ¥100 million)

Item	1995	2000	2005	2010
Market scale in info-communications area	286,187	477,371	795,090	1,245,328
Of which commercialized wireless system services	0	24,084	62,086	111,420

(Based on the outline of "Vision 21 for Info-communications," Ministry of Posts and Telecommunications)

Structuring of advanced information network society

Conceivably, the purposes of structuring an advanced information network society are to enable it to work as the motive power in creating a new dynamism for the Japanese economy, to improve national life (consumer life, education, welfare, medicare, labor environment, etc.) and to contribute to the realization of a global advanced information network society as a common universal goal.

The Ministry of Posts and Telecommunications has brought forward five roles of info-communications in an age of mega-competition, namely, "presentation of a clear vision," "development of info-communications infrastructure," "promotion of dynamic competition," "ensuring social fairness" and "global viewpoint."

And by so doing, the ministry has listed, for a second reform of info-communications services, deregulation, smooth communications, promotion of telecommunications market reform, including reorganizing NTT, completion of digital broadcasting service systems for all households with 2010 as the target year, further promotion of integration of communications/broadcasting services, including the realization of CATV using communications networks, and promotion of new services.

As regards network infrastructures, the structuring of "total digital networks" by 2010 in tandem with the digitalization of broadcasting services through seamless connection of a variety of digitalized network infrastructures — cable, wireless and mobile and stationary — is conceived as the goal.

This will enable any info-communications user to receive bulk multimedia services, such as images, superspeed data transmissions, always, anywhere and from anyone, by means of terminals in common worldwide use without being handicapped by the properties of individual network infrastructures (from the outline of "Vision 21 for Info-communications," Ministry of Posts and Telecommunications).

Dissemination of the Internet

Full-scale introduction of the Internet into Japan was prompted by a speech given Dec. 21, 1993, by U.S. Vice

President Al Gore, concerning "Five Basics of Information Communications Policy," or the announcement of a "National Infrastructure Plan," and his address delivered March 21, 1994, at the International Telecommunications Union regarding "Global Information Infrastructure."

In Japan, the usefulness of the Internet was acknowledged when it was widely used to aid rescue activities at the time of the 1995 Great Hanshin/Awaji Earthquake, and it thus came to attract public attention and began disseminating gradually.

The use of the Internet spread dramatically from workplaces and schools to households as a result of the rapid dissemination of Windows 95 which was released in the autumn of 1995, and the widespread use of personal computers with this operating system.

In 1995, there were supposedly many people who purchased PCs and made contracts with providers without a full understanding of Internet functions. In fact, most of them were net surfers who simply wanted to look at WWW images.

Internet users alone were not necessarily held responsible for this. The problem, it may be said, was that hardware was introduced first when the contents of Internet services were still immature and lacked order, and the interactive media environment was undeveloped.

Of course, transmitters and receivers were unfamiliar with the interactive environment. Before the dissemination of the Internet, there were people who were (somewhat) familiar with the interactive environment through PC communications, but they numbered about 1 million at most, and the number of people capable of exchanging information on the Internet was limited to Internet club members.

With the subsequent increase in the number of Internet users, the number of homepages opened by individuals has increased significantly. At present, it is estimated that there are close to 300,000 individual and corporate home pages.

Judging from the number of people registered in the JP domain, elderly, as well as young, information transmitters on the Internet have increased.

Recently, the Internet has taken solid root in Japanese society, with the result that it has come to win citizenship as one of the means of communication, including E-mail.

Compared with cellular phones, however, which became widespread in Japan almost simultaneously, the rate of Internet dissemination is still low, but it is taking hold slowly but surely in terms of communications media.

At present, homepages are opened not only by companies but by people in general, and electronic commerce has entered the practical stage, making information transmission feasible in many ways.

As a result, crime and shameful acts using information communications networks are showing conspicuous increases. Hence it may be said that the Internet has started becoming established in Japan in a negative way, too.

Increase of Internet users

It is estimated that there were 15 million Internet users as of the end of 1998 and that the number of Web users was 12 million, 1.5 times more than at the end of 1997.

According to an announcement by IDC Japan, the number of domestic users of the Internet was calculated at 5.3 million at the end of 1996 and 10.8 million at the end of 1997, and it is forecast to swell to 31.95 million in the year 2000.

Again, Nikkei BP's "Survey on the Rate of Internet Dissemination Nationwide" revealed that the number of Internet users increased from 7 million (in August 1997) to 8.6 million (in September 1997) and of these, Web users grew from 3.5 million (in March 1997) to 5.55 million (in September 1997). Obviously, the ratio of Web users to all Internet users rose.

A forecast based on the survey results indicates that the number of Web users targeted for Internet shopping is estimated at 12 million as of the end of 1998.

Internet market scale in Japan

Index	Scale	Sources
No. of Internet users	8.84 million	Impress, December 1997
No. of Internet users	8.60 million	Nikkei BP, September 1997
No. of Internet users	15 million	IDC Japan, December 1998
No. of WWW users	5.55 million	Nikkei BP, September 1997
No. of WWW users	12 million	IDC Japan, December 1998

Women Internet users starting to increase

The Nikkei Multimedia magazine launched a periodical survey into Internet users in December 1995, and it recently made public the results of a 7th survey (conducted in December 1998).

A most remarkable fact disclosed by the latest survey is that the rate of women Internet users increases in each survey.

For example, of those who started using the Internet in and after October 1998, women account for 38.8% of the total. They also made up 17.2% of Internet users nationwide.

The rate of women Internet users was 12.29% in the previous survey (in June 1998) and 9.92% in the survey before last (in December 1997).

Undoubtedly, the rate of women Internet users has kept rising since the first survey was conducted in December 1995.

The rate of female office staff and housewives has increased steadily, the former representing 16.2% and the latter 3.4%.

Especially, the number of housewives using the Internet has increased about 2.5 times more than at the time of the December 1997 survey.

On the whole, many changes are noted in the profiles of respondents. Such a trend is indicated conspicuously by the

fact that people using the Internet for personal pleasure account for 61.5%, up 16.9 points from the previous survey.

This needs consideration from the fact that there were 3,200 more valid responses than at the time of the previous survey.

Meanwhile, the rate of people who have shopped on the Internet was 46.6%, falling short of the 50% level. Shopping on the Internet continues to level off.

The majority of those not shopping on the Net hesitate to do so because they are not sure of its safety, whereas about 70% of people with experience in Internet shopping feel anxious about the possible leakage of personal information.

On the other hand, 47.7% of Internet users have expectations for "services recommending items" that suit their personal taste, and yet they are extremely cautious about providing electronic-commerce operators with personal information.

Trends in PC market and PCs in terms of household-information electrical appliances

In Japan, PC sales, which had been registering smooth growth, started leveling off from around 1997, with the result that stocks have increased sharply, making competitive PC discount sales commonplace.

This is reportedly because the introduction of digitalization by companies has slackened due to the prevailing recession, but some people attribute it to the PC market itself having matured.

In other words, this means that there is a limit to the further marketing of present interfacial PCs because they fully satisfy technological and performance requirements.

Given this, in order to further expand the PC market, there may be no alternative but to make an across-the-board change of the interface and use PCs as household-information electrical appliances, that is, turning PCs into multimedia tools in the real sense of the term.

It may be said that PC users look forward to the advent of user-friendly interfaced multimedia PCs, designed from the beginning as a household-information electrical appliance, instead of nominal multimedia PCs that started being marketed in about 1995.

Hence great expectations are held for the merchandise development and marketing capabilities of Japanese household electrical appliance manufacturers.

The number of PC shipments in the Japanese market, which has long been stagnant, is showing an underlying tendency toward improvement, though temporarily.

The number of domestic PC shipments during the October-December 1998 period, it is said, recorded an increase of more than 10% over the corresponding period the previous year, as a result of machines for household use having brisk sales thanks to favorable factors, such as the marketing of Windows 98 in the summer, the tremendous popularity of Apple Computer Inc.'s innovative iMAC, a cut in retail prices, etc.

According to the Japan Electronic Industry Development Association, the number of domestic shipments registered decreases for four quarters in a row after the July-September 1997 period, but later registered an upswing for two straight quarters. It is estimated that shipments throughout 1998 roughly cleared the previous year's level of 6.85 million units. Corporate demand for PCs still remains sluggish.

Delayed creation of a new business climate

In Japan, there has been a delay in the creation of a new climate like Silicon Valley in the U.S., for the development of new venture businesses. There are limits to the in-house ventures that were dominant in the past.

It is becoming difficult for innovative business to emerge from within the framework of existing corporate society, hence there is a pressing need to create a climate for launching new businesses to nurture information society-oriented corporate activities.

There are four important points to consider in creating a desirable climate for new business under electronic-information capitalism:

1. Environment for nurturing up creative entrepreneurs (education for entrepreneurs).
2. Cooperative system that is adaptable to a new age.
3. Fund procurement system.
4. Fair evaluation system for new businesses.

Silicon Valley and several other areas in the U.S. fully meet these requirements and have a climate that helps foster entrepreneurship indigenous to that country, plus individual investors called "angels."

These factors, it may be said, combined to give rise to the prosperity of information technology-related business central to the software industry in the 1990s.

By contrast, the basic climate for nurturing entrepreneurs is still immature in Japan. Affected by the protracted post-bubble recession, corporate investment in information services is still a far cry from coping adequately with the ever-changing times.

In the midst of such a severe business environment, however, entrepreneurs in the info-communications field are also emerging in Japan, where electronic commerce has started on a full-scale basis while Web marketing is going to enter a practical stage.

Part 2 in the next issue will introduce the progress of the digital world in Japan, focusing on the actual status of digital business.

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