

## READING THE FUTURE: JAPANESE INFORMATION SERVICES

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The year 1995 was very significant for Japan. Not only was it the anniversary of the end of the Pacific War but, most significantly, it was also its first year on the Internet<sup>1</sup>.

In Japan, economic booms often occur in a cyclical fashion. There was a Panda boom when Japan normalised her relations with China and a Koala boom when Australia became the most popular destination for Japanese tourists. The most recent boom was in "multimedia", but it has already been overtaken by the "Internet" boom. According to a GLOCOM (Center for Global Communications, International University of Japan) analysis of articles from the business dailies, articles about the Internet in the Nikkei papers surpassed those on Multimedia in December 1995.

After the bubble had burst on the economy, the "Sarin-attack" in Tokyo, followed by another disaster (the Kobe earthquake), the Japanese people began to feel a sense of crisis.

On top of this, Japan has been the subject of US "Japan bashing" for some time. According to the 1994 World Economic Competitiveness Report published by WEF & IMD, Japan lost its eight-year-long top position as Number Three after the US and Singapore. Now, some of the newly industrialised Asian countries are overtaking Japan. It is interesting to note how the Japanese people feel about their change in position which started a while ago.

US President Bill Clinton recently signed the Telecommunication Act of 1996. Although Japan does not want to fall behind in information infrastructure, the country's reform programmes have been temporarily put aside until the next election as an excuse by Japanese politicians. Japan's deregulation was no doubt slowed by the lack of political initiatives over the years. In my view people's feelings of helplessness and frustration have accumulated to crisis level. Unless there is a breakthrough on the political front in Japan (other than temporary relief from time to time by news from the US about the success of a Japanese professional baseball player, Nomo), the gloomy picture will continue for the rest of 1996 in Japan.

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<sup>1</sup> Professor Jun Murai, Keio University, says that the Year 1994 is the first year of the Internet in Japan in his book *Internet Declaration = Intanetto Sengen*, p. 124, 1995. However, it is more widely accepted that the first year of the Internet in Japan was 1995.

## Internet developments in Japan

### Origin of the Information Society

Japan had some discussion about the concept of Japanese "informatization" (Johoka) in 1960. The Japanese scholar, Umesao Tadao (Faculty of Science, Kyoto University) applied the term "Information Society" in 1960<sup>2</sup>. His thoughts were presented first in *Hoso Asahi* and next in the popular magazine *Chuo Koron* under a title introducing the information industry debate (Joho Sangyoron) in 1963.

Thirty years ago there was no such concept as the 'information society' we now know. It is worth remembering that Japan had the idea a long time ago. Every time the Japanese economy confronted a crisis, Japan often engineered a kind of Japanese renaissance by fostering knowledge-intensive high industries for survival and success.

### 1983, World Communication Year

The United Nations designated 1983 as "World Communication Year" and public programmes began to appear. The MITI (Ministry of International Trade and Industry) put up a programme called "New Media Community Concept", and the Ministry of Post and Telecommunications put up the "Media Terminal Concept" and "Teletopia Concept", to name just a few "concepts". Interestingly, however, there was not much serious coordination among the various governmental programmes. As a result, no particular programme came out with anything sufficiently significant to be called a success. Almost all were related to economic growth visions heavily based on technology oriented industrial policy principles.

Professor Jun Murai of Keio University started establishing JUNET (Japan University Network) in 1984. This was the origin of the first Japanese Internet a few years later. The first JUNET connections to the Internet began to emerge with the establishment of connections to USENet (United States Education Network) via telephone lines in 1986 and to CSNet (Computer Science Network) in 1987 and was limited only to the exchanging of English email messages between these two networks.

### WIDE Project 1988

WIDE (Widely Integrated Distributed Environment) was established to connect to world network systems instead of being limited to point-to-point connections to the US. Furthermore, developers wanted to exchange e-mail messages in Japanese. They developed a Japanese font for Unix, now known as K14, distributed by MIT for XWINDOW workstations around the world. This was significant, since there was no other Japanese font available outside Japan

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<sup>2</sup> p. 6 "Time of the Signs" by Sam K. Steffensen, in Working paper, August 1996 of the Department of International Economics and Management

at that time, and it was invented by the Japanese and provided at no cost to the rest of the world.

In 1988, NACSIS (National Center for Information Systems) intended to establish their mainframe computer in the US. WIDE was connected in a real sense to the Internet using the Internet protocol X25 with a speed of 9600 bps via this dedicated NACSIS line to the US in 1989.

### **Japanese Internet Services in the 1990s**

It is obvious that the 1990s are a very important stepping stone to the 21st century for every country in the world. How you prepare and what you implement now are most important in order to make an impact on the country in the next century.

As mentioned in my introduction remarks, the sense of crisis amongst people in Japan is becoming increasingly evident. Thus, a country as crisis-ridden as Japan will shift their priorities more quickly and implement policies in key areas such as information technology, the computer industry and telecommunications, so as to remain a global economic power. To ascertain whether or not Japan is a crisis-ridden country or whether Japan has the ability to change the situation, it is worth looking at some developments in Japan.

According to the Internet White Book '96, 62 percent of individuals have used the Internet for less than two years but more than three months, whereas those people using the Internet for more than two years is only 12 percent (Figure 1).

The number of male users is astonishingly high in comparison to female users (Figure 2). Is this unique to Japan at this early stage of the Internet phenomenon?

Eighty six percent of male users fall within the annual income range of ¥3,000,000 (A\$35,300) to ¥10,000,000 (A\$117,650) (Figure 3). They are typical middle class people. Whereas female users in the same range account for only 48 percent (Figure 4).

Apple computers hold a predominant position with 36 percent which is a much higher percentage than in such countries as the US or Australia (Figure 5). This may indicate the superiority of Apple's Worldscript 2 that handles Japanese language better than any single operating system in Japan.

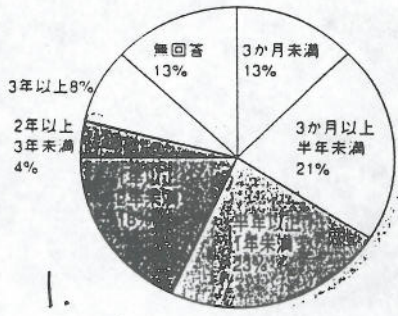
A similar situation to the above prevails in the rest of the world (Figure 6).

A high percentage of people have Internet connections at home (Figure 7), and there is a high percentage of people with dial-up connections at work (Figure 8).

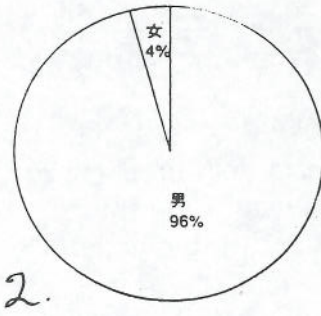
There has been a noticeable increase in the number of ISPs (Internet Service Providers) in Japan. There were more than 100 ISPs at the end of 1995. This is

# 個人ユーザーの属性 (I)

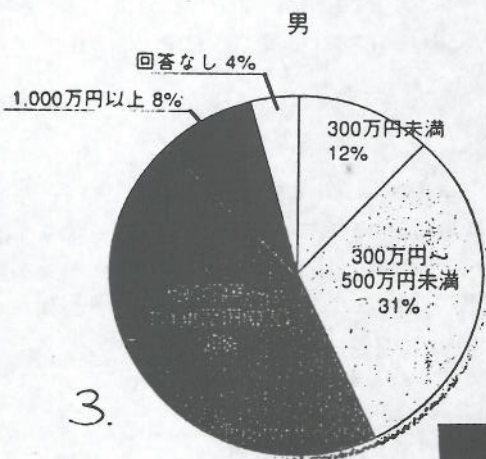
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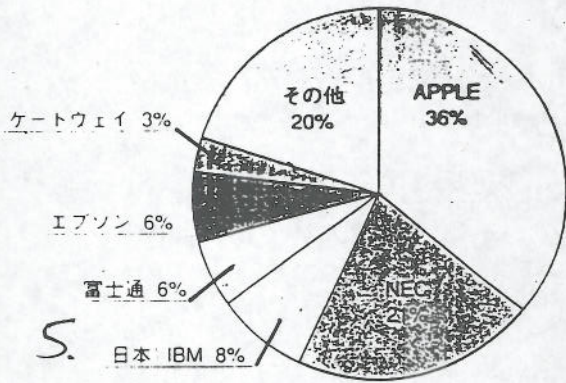
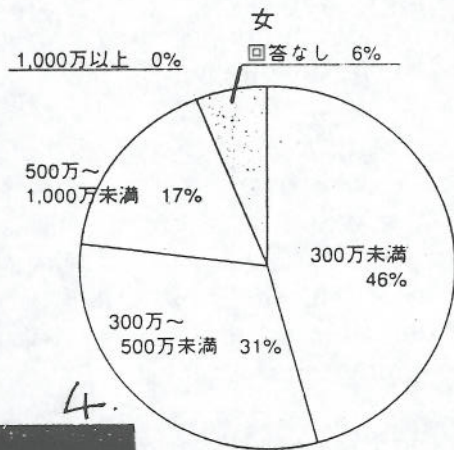
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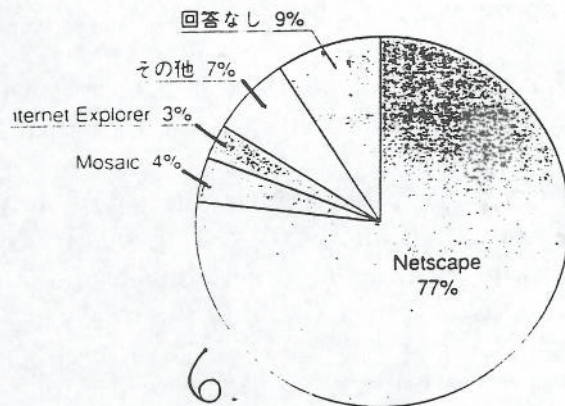
男女の割合



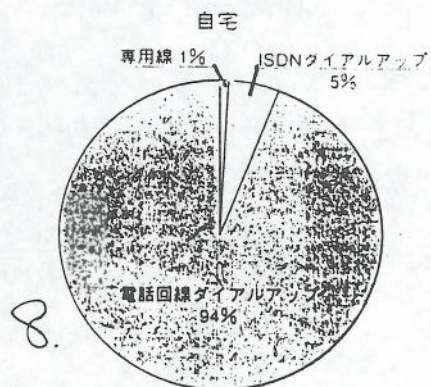
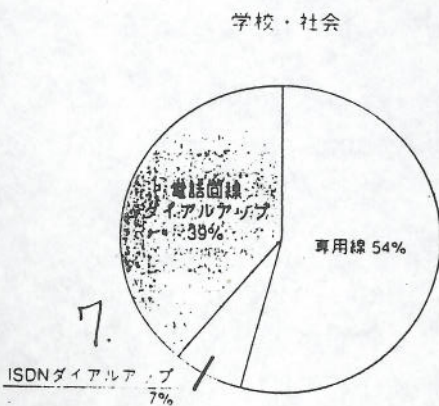
年収分布



使用しているハードウェア



使用しているブラウザ



インターネットの接続形態

an amazing increase in comparison to the eight in April 1995, and two in April 1994. As of April 1996, more than 325 ISPs were recorded<sup>3</sup>.

As we know, user numbers are always controversial. According to the latest survey of JPNIC (Japan Network Information Center) there are now over 8,000 domain names in Japan and the number of host computers is well over 250,000. There are also over one million subscribers to the two major ISPs, Niftyserve and PC-VAN. These figures indicate that there are between two to three million Internet users in Japan at the time of writing. An estimated projection of the Internet users in Japan by 1999 is 29 million (a ten-fold increase from 2.5 million to 29 million in just three years). Some experts say that if 128 Kbps pricing falls to between ¥30,000 and ¥40,000 per month then the estimate above is possible - but it still remains to be seen.

### **Government developments**

The Japanese Government has finally awoken to the realities of what the rest of the world has already been working on for some time to prepare for the 21st century and is promoting "Administrative Informatization".

According to the Basic Plan for Promoting Administrative Informatization (hereinafter referred to as The Basic Plan) the aim is to ensure the wholeness of public administration, to promote its streamlining and improve efficiency, to cope with the needs of people and respond properly to internal and international changes affecting public administration. The Basic Plan shall be a five-year plan starting in April 1995 and shall cover all the administrative organs of the national government. It is now called "Kasumigaseki WAN (Wide Area network)". Each ministry/agency shall establish its own action programme in accordance with the Basic Plan. these WANs and LANs (Wide and Local Area Network)s constitute the entire programme. The "Kasumigaseki WAN" adopted TCP/IP protocol and the JIS X 5801 standard. They bought a commercial dedicated network line to connect to all ministries/agencies and built a "firewall" around the network<sup>4</sup>.

The Ministry of Post and Telecommunications started their LAN in April 1994 and each member has his/her Internet account. There have not been any serious threats to the operations for the last two years. They are quite positive about their operations with the Internet.

The Ministry of Constructions gave a personal computer to every member in March 1996 and has been operating a LAN since then. Their LAN was connected to the Internet in July 1996 via one terminal per section. They see no need to give an Internet connection to every member.

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<sup>3</sup> p. 6 "Time of the Signs" by Sam K. Steffensen

<sup>4</sup> see more of this topic at  
<http://www.somucho.go.jp/gyukan/kanri/b.0:5.htm> or  
[http://www.somucho.go.jp/gyukan/kanri/b\\_01e.htm](http://www.somucho.go.jp/gyukan/kanri/b_01e.htm)

The Ministry of Finance has operated a LAN since April this year and this is to be connected to the "Kasumigaseki WAN " but they are not going to have a direction connection to the Internet as a protection against outside intruders.

The Japanese government has prepared a special budget for the Basic Plan. They have given 20,000 personal computers to 25 ministries or agencies at a cost of ¥1,000 million. This has contributed to the computer literacy rate which has risen to one computer for every 1.3 persons in every central government organisation.

Looking at some of the latest specific government Internet activities, the Japanese Foreign Ministry started its web services for the Clinton visit to Japan. They covered various items including those made available via a direct link to the White House during the period of his stay. The number of accesses made to the page from 1st to 30th April 1996 was 480,000 with access from the US of 130,000. The magnitude of the number of accesses showed the significant impact and success of his visit to Japan.

However, when one looks at the realities for the use of the Basic Plan as a springboard to a more open and digitalised Ministry of Foreign Affairs, it appears far from a success from the point of view of the three-layered network in the Ministry.

The Ministry of Foreign Affairs started their LAN in July 1995. There are three different levels of information, namely "top secret", "secret" and "treat with care". As a result, people simply use LAN1 for lunch appointments, newspaper articles and some parliamentary activities. They also created LAN2 which has no interconnection with LAN1 and concentrates on communicating with their outlets (embassies, consular generals) around the world. They set up a separate computer terminal for this operation for the sections (not for each individual) to meet their needs. The Ministry is planning to have LAN3 connected to "Kasumigaseki WAN" at the beginning of 1997. Here we see three different networks in operation within the Ministry. How inconvenient it must be for one person to operate from three different computer terminals due to the requirements of the level of information.

However, it is still worth noting that the Japanese Prime Minister's homepage (<http://www.kantei.go.jp>) was opened two months earlier than the White House homepage<sup>5</sup>.

The Japanese Ministry of Post and Telecommunications (MPT) forecast a 123 billion yen market and 2.4 million new jobs by the year 2010 with the completion of a national optical fibre network according to their Whitebook 1994. In February 1995 the Advanced Information and Telecommunication Society Promotion Headquarters confirmed the year 2010 target date.

Nippon Telegraph and Telephone Corporation

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<sup>5</sup> p. 102 Internet White Book '96

It is significant that the NTT (Nippon Telegraph and Telephone Corporation) is one of the world's biggest companies with consolidated operating revenues of 7 trillion yen (about US\$70 billion). Note that these revenues were slightly larger than the nominal GDP of Malaysia, Singapore, the Philippines and Russia. The significance of an NTT reorganisation cannot be underestimated<sup>6</sup>.

Former Prime Minister Nakasone Yasuhiro first encouraged administrative reform of NTT in 1985 with steps towards privatisation. NTT stock issues began by 1987 and efforts to introduce competition raised breakup plans in 1989-90. However, the breakup attempt failed and it is still debated many years later.

Some of the points debated in the newsgroup called "Netizen E" on 27th October 1995 summarised by Stephen J. Anderson are as follows:

- a. Goals of the current reforms should be to provide inexpensive, diverse, and quality services for Japanese consumers
- b. These goals should be achieved by introducing competition opinions divided regarding the types of deregulation which should be introduced to encourage competition.

The political leaders of the ruling coalition party postponed their decision yet again until after the next general election, due on 20th October 1996, because the issues have been highly politicised.

Japan's efforts for the success of the information infrastructures as an "information society" that will follow from NTT reform for competition and competitiveness for Japan may be affected by a sense of falling behind amongst people. Unless the next election results create an environment that is favourable to the NTT reform the crisis consciousness amongst people in Japan may reach its highest point. Therefore, we should recognise the importance of the next election, not only from the point of view for Japan's information infrastructure but also, more significantly, from the point of view of the wider implications of meeting people's expectations toward the 21st century in Japan.

### **Japan in the Future**

There have been two major crises in the history of modern Japan. America's black ship at the end of the Tokugawa period was the first and the defeat in the Pacific War was the second. Japan now faces the third just before entering the 21st century as it lags behind the US and other countries such as Singapore.

Though Japan managed in the past, it is not easy to speculate on how Japan is not only going to solve the problems confronting them now but also remain a formidable power in the world.

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<sup>6</sup> p.5 *From Crisis to Information Society in Japan: NTT Reform* by Stephen J. Anderson.

As we know, Japanese economic power is formidable. It is the second biggest economy after the US and the merit of having a scale of those proportions becomes significant for any kind of development. Will it be able to translate that power into yet another "Internet miracle" or "Information miracle" for Japan? The question is whether or not Japan will be a formidable Internet information power. Japan is going to be a strong competitor in the information industry and is already in some key computer technology areas.

According to postings to the Dead Fukuzawa Society electronic discussion list run by Dr Dave Jenkins, 28th June 1996, there are two major problems confronting Japan in order to become a formidable Internet power in the world. The technical problems are as follows:

- Sift-jis, JIS and other codes for writing Japanese pages for the Internet
- DOS/V with TwinBridge, UnionWay or the Japanese Language Kit
- NTT's exorbitant costs.

The social problems are as follows:

- Social marginalisation of Internet personnel:  
    Strict vertical structure in Japanese corporations  
    Internet has not been seen as a serious business or research tool,  
    rather as recreational
- Language publishing difficulties
- Internet issues are not on university entrance examination papers.

### **Conclusion**

The "Japanese see themselves amid a crisis of national identity and goals" says Professor Anderson. It is agreed that Japan is a crisis-ridden country. No-one knows exactly what is going to happen. Is this the same as in the past, and will Japan manage to overcome this national crisis as she has done in the past?

I have presented one aspect of information on the topic currently available from Australia, and I feel it definitely requires further investigation carried out personally in Japan.

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