

Report on the Conferencing Market in Japan 2002

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Mr. Keisuke Hashimoto joined NTT in 1992 after collage graduation, and left the company in July 2001 to become a full-time teleconferencing evangelist. Elliot Gold describes him as “having fire in the belly.” For the majority of his time at NTT he was involved in sales and marketing of NTT’s network services and videoconferencing systems, and also worked on DataCenter business marketing. He was also a committed core member in the project to launch NTT Phoenix Communications, which provides video bridging services in Japan. He fell in love with conferencing when he was involved in NTT’s conferencing business. Along with his marketing experiences, he has accounting experiences as well.

Hashimoto formed [the Japan Collaborative Multimedia Teleconferencing Forum](#) in 1997, and has run “dte-forum,” Japan’s largest teleconferencing mailing list and Japan’s first teleconferencing portal web site, since its inception. And since December 1999, he has published “*TeleconferencingNOW*,” a monthly e-mail newsletter in Japanese focused on audio/video/data conferencing.

Hashimoto was a one-year AFS student to Australia (Western Australia) from January 1985. He holds Bachelor of Arts degrees (International Politics) from Willamette University (Oregon, USA) and Tokyo International University (Saitama, Japan). He also took part in the Washington Semester Program in 1991 sponsored by the American University in Washington, D.C. with an internship experience at the Embassy of Japan.

He lives with his wife and daughter in Funabashi, Chiba, Japan. He was born in 1967 in Tokyo.

People around him call him “Keis” or “kay” or “Hashimoto-san.”

TeleconferencingNOW

TeleconferencingNOW is a subscriber-based e-mail newsletter published monthly at the end of each month in Japanese with a focus on audio/video/data collaboration and conferencing news and applications. The readers are primarily Japanese who want to know more about the conferencing industry and keep abreast with what is happening in the marketplace.

The newsletter was launched in December 1999 with approximately 1,100 current subscriber number as of April 27, 2002. And it is currently the only specialized newsletter in Japan that regularly reports on the conferencing industry.

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Introduction

This report is an update to a report published in the winter of 2000 in order for you to keep abreast with the current status and trends that prevail in Japan.

The Japanese conferencing market is still at an early stage compared with the US, which dominates the global market; however, the Japanese economy and its telecommunications market are the second largest in the world behind the US. According to Elliot Gold's [TeleSpan](#), the Japanese video market is 5% of the global market whereas the US occupies 55% and as for audio, the Japanese market is 2% and the US 86%.

Reflecting this status of the market, as was mentioned in the previous report, in Japan there is clearly no local authoritative report, like *TeleSpan* in the US, that keeps track of what is happening in the market; however there is demand for such a report in and especially out of Japan. But just one known research firm in Japan covers briefly the shipment of video endpoint in this country in its yearly report on telecommunications trends in Japan, and it is currently available only in Japanese. However, the information is not generally known to the public and is fragmented.

This situation is, unfortunately from our perspective, much the same as one year ago; that implies the awareness and recognition of conferencing is still low as opposed to other IT areas such as CRM, ERP, ASP, Data Center, etc.

Having said that, this report is intended to address, to some extent, this kind of demand that is rising in and out of Japan, but is specifically tailored for the non-Japanese for their reference.

In this report, we will try to discuss our observation of the status and trends of the market especially focusing on the endpoint and services sectors of conferencing market; in other words, we will try to explain what kind of market players are there, what products and services they offer in Japan, how they are coping with the young market with its vast potential for future growth, so that the readers of this report can obtain a bird's eye view of the market.

In addition, we will show how audio or video conferencing is implemented in organizations, how media in Japan are treating this conferencing market, and other general observations as an indication of future market trends.

Together with that, we will also refer to infrastructure issues such as ISDN, IP, xDSL, optical fiber, etc., and how they are prevailing and used. We cannot avoid these infrastructure issues when implementing the conferencing technologies in organizations, as we all understand.

We will also discuss 3G services that are rising in Japan and some other mobile phone related trends, such as mobile Internet and mobile file transfer, that may have some kind of favorable impact and that may act as catalysts for change in the young conferencing market.

Last but not least, besides the general overview of the market, we will review respective market players, vendors and service providers that are actively operating in Japan, with some leading distributors and resellers so that the review may help you get to know each of them and may help you find a new partner.

We hope that this report will help you sort out the puzzle pieces and bring them all together to complete the puzzle where information regarding the market is scattered and not much available.

1. Overview of conferencing market and associated areas

1.1. IP in Japan

“IP video is gradually coming into view in Japan. Two out of ten sales today are IP video related integration right now,” said the CEO of a system integrator specializing in videoconferencing in Japan recently. Other video integrations are based on ISDN infrastructure because of lingering concerns about the reliability of IP communications. But they are seeing more interest emanating from both public and private sectors that are aware of IP communications.

IP, both as internet and intranet, is beginning to be widely deployed in organizations, especially large and medium sized companies, government agencies, and schools. Already, 62.5% of companies have intranet implemented in their organizations, 13.3% are conducting implementation right now, and 9.8% are planning to implement IP intranet in the near future according to statistics released by Internet Association Japan in [Internet White Paper 2001](#).

As for connection bandwidth to ISPs, 50.3% are either at 64kbps or at 128kbps, 25.3% are connected at 1.5Mbps, and 7.3% are using bandwidth higher than 1.5Mbps. Again according to the White Paper, it has been observed that there is a shift from narrower bandwidth usage to wider bandwidth like 1.5Mbps over the last couple of years. But companies that are using narrower bandwidth such as 64kbps and 128kbps dedicated pipelines will probably be shifting to inexpensive 1.5Mbps or 8Mbps ADSL or 10Mbps or 100Mbps optical fiber services for broadband connectivity according to IT Market Navigator 2006, a recent report released by Nomura Research Institute, Ltd.

Figure 1. Cost of T1 dedicated pipeline for Internet connection in Yen

Ex. IJ T1 (1.5Mbps) Standard (1/32C)

| Initial cost | 109,000 | including installation cost |
|--------------------|---------|--|
| monthly basic cost | 298,000 | *The cost will vary depending on distance from your premises to nearest NTT switching office, and on level of SLA etc. |
| breakdown | 117,000 | Internet connection charge |
| - | 181,000 | monthly flat charge for T1 within 15km diameter from nearest NTT switching office |

- IJ or Internet Initiative Japan is a leading ISP in Japan.
- * The data is based on information that appears on IJ's web site at www.ij.ad.jp

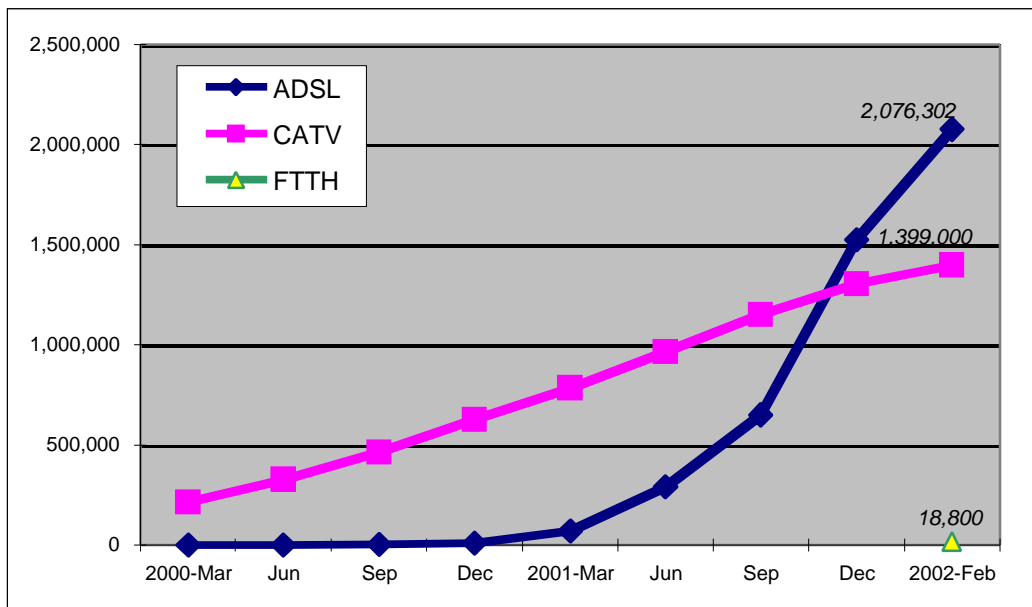
The ADSL subscriber number has reached 2.37 million as of March 2002, according to an ADSL statistics released monthly by [Ministry of Public Management, Home Affairs](#),

[Posts and Telecommunications](#). This was a sharp increase taking just one year to reach that level from 19 subscribers in January 2000 and 16,193 in January 2001.

It is said that cost of broadband access in Japan, which was once one of the highest in the world, is now the lowest in the world, which has created more and more demand for ADSL, cable, or optical fiber. Despite the growing demand for ADSL service, some corporate organizations and residential households cannot have ADSL installed in their premises because they are too distant from the local switching offices of NTT. If they are more than 4 or 5km away, the ADSL signal is too attenuated to provide stable ADSL logical links. In such cases, companies choose ISDN or inexpensive dedicated leased lines instead for data communications or internet access.

However, if optical fiber services such as NTT's BFlet's (FTTH service) get widely offered, they tend to choose the service because it gives 10Mbps or 100Mbps access to the Internet at ¥5,000 to ¥9,000 per month at lowest. NTT said in February 2002 that it would accelerate the expansion of the service areas for the BFlet's rather than Flet's ADSL trying to gain 620,000 users nationwide for the FTTH service by the end of March, 2003.

Figure 2. ADSL/Cable Internet/FTTH subscriber number growth from March 2000 to February 2002



* Statistics compiled monthly by Ministry of Public Management, Home Affairs, Posts and Telecommunications

However, as indicated in the above diagram, ADSL subscriber numbers are increasing at a skyrocketing pace. We have seen with the advent of the broadband services, streaming services such as simultaneous broadcasting of TV and radio programs, archived videos, etc. But at the same time, real-time video communications have been seen as an application suitable for broadband and some companies have launched IP video chat or communications services.

Inexpensive IP video software or devices combined with these inexpensive broadband connections may boost more demand for IP video usage in Japan. Actually reflecting on

these trends in the previous paragraphs, companies such as [NTT East](#) / [NTT-West](#), [NTT-IT](#), [Broad.TV](#), and [Net meeting Service](#) and [Usen Broadbandnetworks](#) have launched IP video services for either business or consumers. And recently [WireOne](#) established its POP for Glowpoint IP video service in Tokyo to serve Japanese customers as well with future plans to have an MCU there.

1.2. ADSL surpasses Cable Internet

Cable TV service has been seen as a good choice for broadband access until recently; however, ADSL subscriber numbers surpassed those of Cable Internet in December 2001. As of the end of December 2001, there were 1.3 million Cable Internet subscribers, whereas there were 1.45 million for ADSL, an increasing trend indicating that ADSL is the mainstream broadband access method for many in Japan for the time being.

But this situation may be changed in the near future because USEN Broadband Networks and NTT and others are trying to expand their optical fiber services in Japan, which gives the users more bandwidth than ADSL.

As broadband access becomes available nationwide, it has given users more choices in how they use broadband internet.

1.3. A shift from ISDN video to IP video

Some organizations are using IP video through ADSL or 100Mbps optical fiber Internet connection services. Cost for these services are very low with the aforementioned conventional dedicated pipelines, so some companies in Japan may shift from dedicated lines to one of these ADSL or optical fiber services as their primary access lines to the Internet. For example, NTT's cost for 8Mbps ADSL ([Flet's ADSL](#)) is now ¥2,280 per month at lowest and NTT's 100Mbps optical fiber internet connection service ([BFlet's](#)) costs just ¥5,000 or ¥9,000 per month.

We heard that a certain university in Japan using the Bflet's 100Mbps service has periodical IP video business meetings with US counterparts at 768kbps without worrying about International phone charges. And they see it as feasible in terms of business.

If they had used international ISDN for the meetings instead at 768kbps, the ISDN call charge likely would have been more than ¥120,000 just for a one-hour meeting. So they are now greatly benefiting from the use of inexpensive IP broadband connections. This availability of inexpensive broadband services may gain more attention from global companies who need more communications that transcend national borders. As ADSL and optical fiber services become widely available in Japan into 2002, the chances of using IP video will probably grow as we are now seeing IP video case studies coming out as time goes by.

Figure 3. Prevalence of Internet connection in corporate offices in Japan

| year | the number of surveyed offices | the number of employees | | |
|------|--------------------------------|-------------------------|--------|--------|
| | | more than 100 | 30-99 | 5-29 |
| 1996 | 4,244 | 20.10% | 9.70% | 4.60% |
| 1997 | 4,352 | 32.50% | 19.90% | 10.40% |
| 1998 | 4,010 | 48.30% | 29.60% | 16.70% |
| 1999 | 4,186 | 61.80% | 42.40% | 29.20% |
| 2000 | 3,070 | 80.50% | 63.60% | 40.7% |

* Yearly survey on use of communications services in corporate offices compiled by Ministry of Public Management, Home Affairs, Posts and Telecommunications

1.4. IP video deployment in local governments

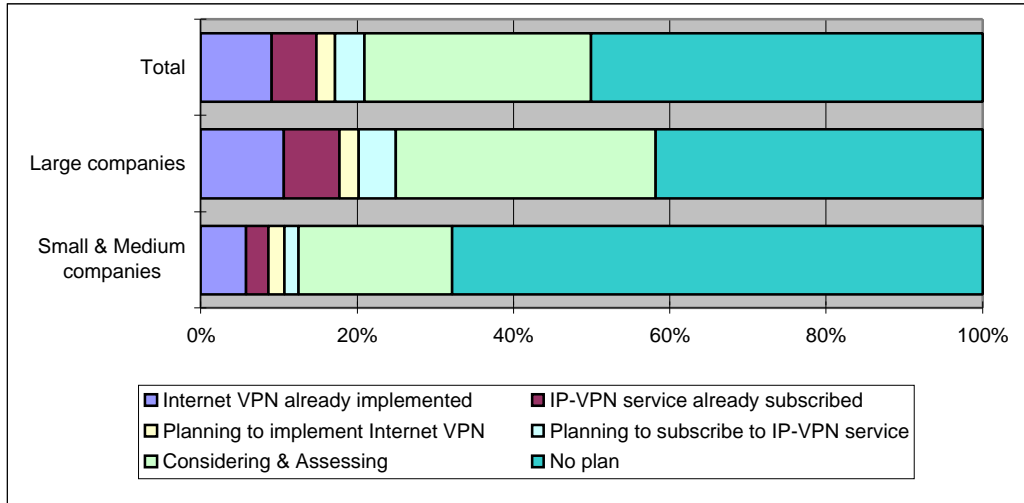
Local governments such as Okayama, Tottori, and Shiga prefectures are now implementing IP networks within their respective organizations by having optical fiber in place among dispersed locations. In the IP networks, mission-critical traffic is transported back and forth but now, to take more advantage of the wider bandwidth, they have started deploying IP video as a means to improve their productivity and to provide better citizen services.

Citizens in Okayama, for example, can ask questions about taxes via desktop IP video to the specialists at remote tax offices, and hospitals are using IP video to send medical pictures over an IP network among doctors.

1.5. IP-VPN usage

In addition, companies are gradually paying attention to IP-VPN or Internet VPN together with VoIP as a means to reduce costs associated with voice communications. VoIP receives more coverage than Video Over IP in Japanese IT media; however, most companies are taking a gradual approach to enterprise-wide implementation of VoIP as legacy PBX and TDM etc. are still being used in organizations.

Figure 4. IP-VPN Implementation in corporate organizations

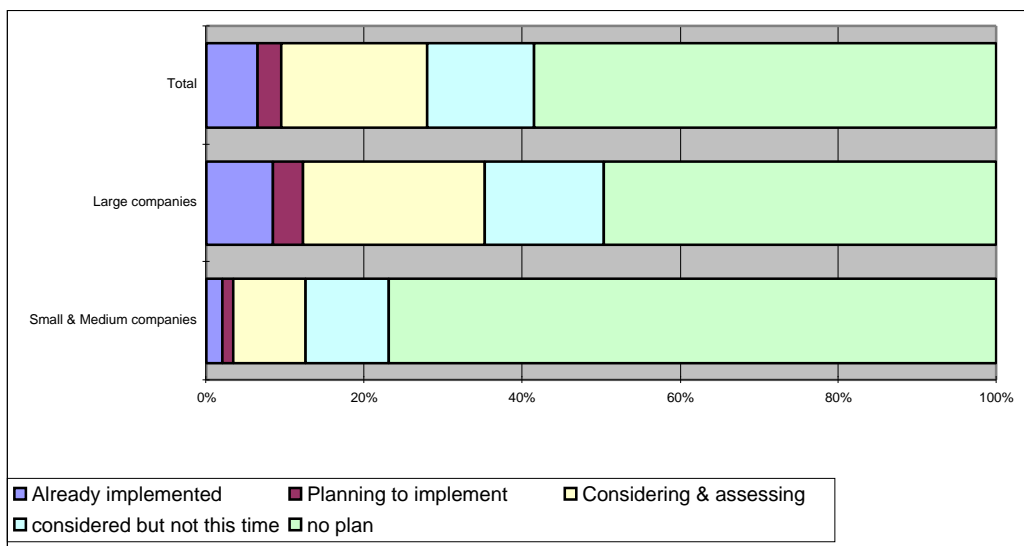


* The year 2000 survey on computer usage in corporate organizations by Japan Information Processing Corporation 745 companies sampled (Large: 505, Small: 240)

1.6. VoIP getting huge attention from companies

However, among them, Shinsei Bank, Ltd., with approximately 2,000 employees, for example, takes a different approach. The bank went ahead and deployed 3,500 Cisco IP Phones recently throughout the organization, including 24 branches in Japan, spending approximately ¥500 million or \$3.8 million US to replace all of its legacy phone systems.

Figure 5. VoIP Implementation in corporate organizations



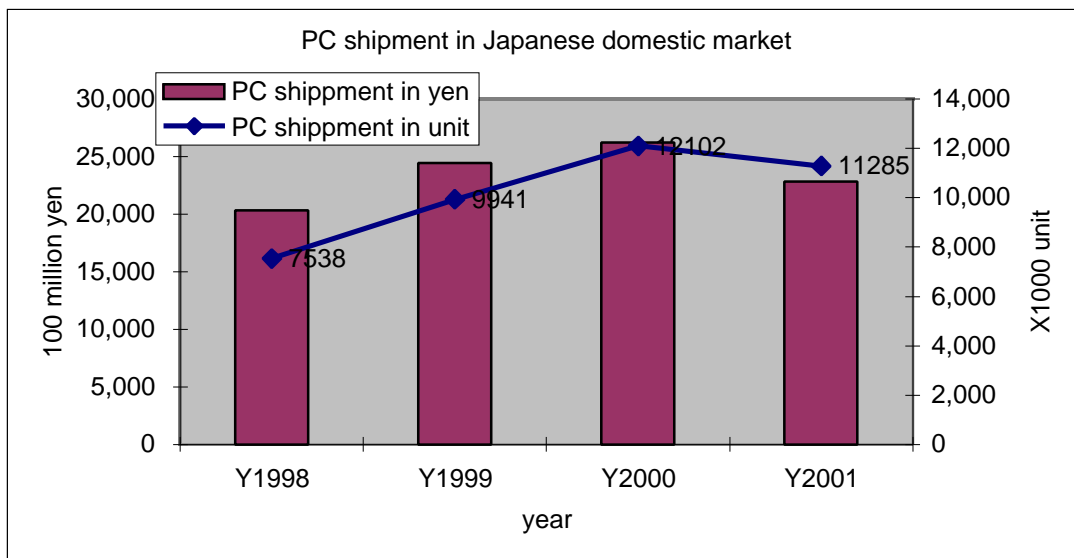
* The year 2000 survey on computer usage in corporate organizations by Japan Information Processing Corporation 742 companies sampled (Large: 503, Small: 239)

[Oki Electronics](#) has deployed IP-VPN connecting 25,000 employees at 300 locations in and out of Japan benefiting by a 40% cost reduction in voice communications and an 80% cost reduction in network maintenance and operations. And [All Nippon Airways](#), an airline carrier, also decided to deploy IP-VPN in its organization to connect its airport offices, branches and headquarters transporting VoIP traffic along with mission-critical traffic.

Based on these trends, some telecommunications carriers such as [KDDI](#) and [Yahoo! Japan](#) are launching VoIP services both for business and residential use.

1.7. PC shipment in Japanese domestic market

Figure 6. PC shipment in Japanese market



*Industry statistics compiled by Japan Electronics and Information Technology Industries Association

Despite an economy in the doldrums and a drop in the number of PC shipments in 2001 compared with the previous year, [JEITIA \(the Japan Electronics and Information Technology Industries Association\)](#) sees that there is a steady corporate demand for personal computers as part of an IT investment.

Together with availability of broadband connectivity, some corporate users have started to consider desktop IP video as an effective way to conduct personal business meetings.

1.8. ISDN usage is still strong but declining year by year

ISDN is still gaining a strong demand in corporate users mainly for data communications, although the sales trend for ISDN is declining according to NTT, as services for ADSL and other broadband methods are fast becoming available with lower costs.

Japan is the second largest user of ISDN in the world, behind Germany. However, ISDN

subscriber numbers for the year 2001 were about 11 million nationwide. ISDN consists of about 16% of the combined total subscriber numbers of fixed phone services (ISDN and analog). Analog service is losing customers year after year by around 5%. As of 2000, there were 52.26 million Analog phone subscribers. Some of them have been absorbed into ISDN.

Figure 7. Analog and ISDN subscriber numbers and their breakdown

| Type of line | Total Subscriber Number | breakdown | |
|---------------|-------------------------|-----------|--------------|
| analog | 52.1 million | business | 13.5 million |
| | | residence | 38.6 million |
| ISDN(BRI/PRI) | 10.8 million | business | 6.33 million |
| | | residence | 4.5 million |

*Telecom data book 2002 compiled by [Telecommunications Carriers Associations](#)

The decline in the analog service subscription is mainly because every new analog subscriber has to pay an initial installation cost of more than ¥72,800. NTT introduced a new analog phone service beginning February 12, 2002 that does not require the ¥72,800 installation fee; however, an additional ¥640 will be added onto the current monthly basic rates, which ranges from ¥1,450 to ¥2,600.

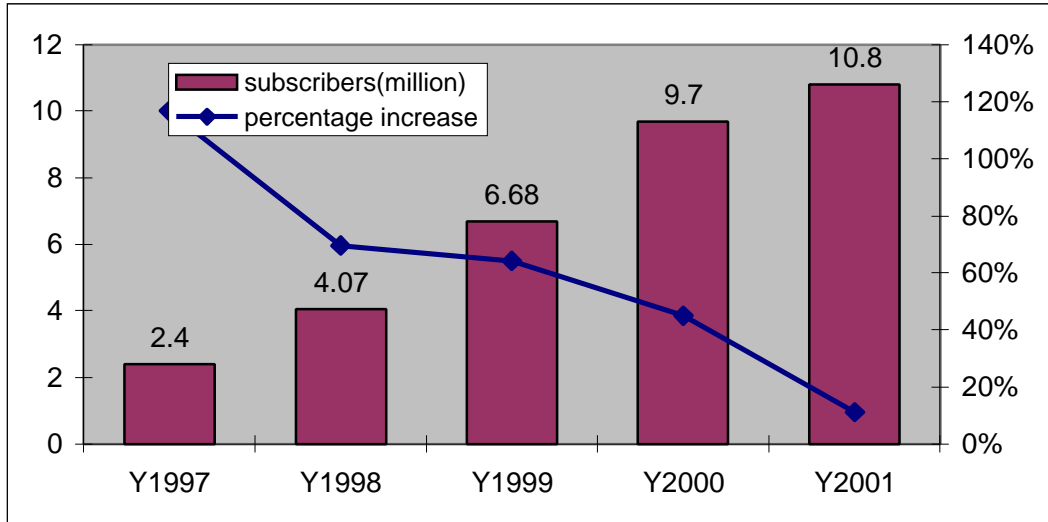
ISDN used to be the same, meaning it required a payment of ¥72,800 for BRI and ¥102,800 for PRI as initial costs. However, for BRI, NTT introduced in 1997 INS64 Lite in which new subscribers were not required to pay the expensive initial cost. This has contributed to the boost of ISDN new installations as the Internet has become popular. But customers must pay ¥640 per month in addition to the monthly basic rate of ¥2,830 (residence) or ¥3,630 (business).

Figure 8. Costs for [NTT's ISDN service](#) (in JPY)

| - | | INS 64 | INS64 Lite | INS 1500 | - |
|--------------------|-------------------|------------------------|------------|----------|--|
| | | BRI | BRI | PRI | |
| Initial cost | | 72,800 | 800 | 102,800 | excluding installation cost |
| monthly basic rate | business | 3,630 | 4,270 | 31,000 | - |
| | residence | 2,830 | 3,470 | | - |
| | DSU rental | 1,700 | | 12,000 | - |
| | line rental | 60 | | 2,000 | - |
| | per minute charge | same as analog service | | | 10 JPY per 3 minute in local call per 1B channel |

* NTT-East Corp.

Figure 9. ISDN subscriber number (million) and its percentage increase



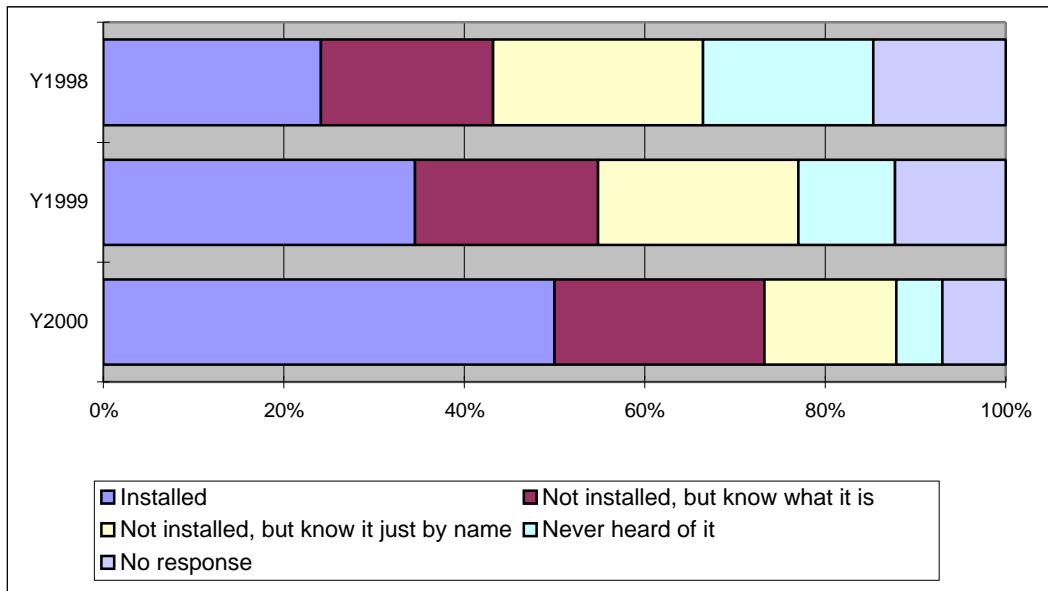
* Yearly survey on use of communications services by Ministry of Public Management, Home Affairs, Posts and Telecommunications

In Japan, once you pay the ¥72,800 or ¥102,800, it appears on the corporate balance sheet as an item categorized as an intangible asset, which can be used as collateral. This practice began after World War II, with initial purpose for the post-war government of collecting money from each new subscriber to finance the national project to implement the rebuilding of the nationwide infrastructure of the circuit-switched network, which was destroyed during the war. NTT was privatized in 1985 and the surcharge and the balance-sheet practice have become meaningless in the light of their initial purpose. This ¥72,800 surcharge will sooner or later be abolished.

ISDN is ubiquitous throughout Japan. It is easy to order ISDN from phone carriers, mostly NTT, and easy to set up or install because of the wide availability of reasonably priced terminal devices such as terminal adaptors and DSUs in the marketplace. It usually takes only one week or so for BRI installation and one month for PRI in Japan.

Although the trend for ISDN is slowing down, companies are still using the service for data communications such as LAN/WAN connection or Internet access. ISDN in Japan is known as INS 64 for BRI and INS 1500 for PRI. Both are NTT's service names for ISDN.

Figure 10. ISDN installation in offices



* Year 2000 survey on use of communications services in 5600 corporate offices compiled by Ministry of Public Management, Home Affairs, Posts and Telecommunications_(The samples excluding companies categorized in post and telecommunications industries)

ISDN videoconferencing users in Japan are using a bandwidth of 128kbps in many cases simply because of cost issues, but many of them have started to use more bandwidth for video meetings as their counterparts overseas request 384kbps video links or higher. But more than 80% of domestically held meetings were being conducted at 128kbps.

Since a telecommunications carrier called Fusion Communications introduced its ¥20 per 3 minutes public communications services all over Japan, including ISDN service, many heavy users of ISDN video are shifting to Fusion’s ISDN service because the price is roughly 1/4 that of other carriers. Cost for ISDN video is certainly a serious issue for many video users and Fusion’s low-cost ISDN service will help video users to reduce their costs.

And schools such as junior and senior high are using ISDN videoconferencing for connections to their counterparts both in Japan and overseas to promote friendship and understanding. Approximately 1000-2000 schools (out of a total 40,793 elementary, junior and senior high schools combined as of 2000 in Japan according to statistics compiled by [Ministry of Education, Culture, Sports, Science and Technology](#)) have videoconferencing systems in operation. A couple of years ago, [Mr. Tetsuya Komuro](#), a famous music composer, donated 1000 of NTT’s Phoenix desktop videoconferencing systems (co-developed based on Live200p desktop system with former PictureTel) to schools around the country.

The government is now conducting studies to promote IT technologies and use of the Internet in schools for educational purposes. [JERN](#), together with [Teleclass Japan](#), a nonprofit organization led by Ms. Yoko Takagi, is helping schools that are using videoconferencing and promoting usage in cooperation with similar education-oriented entities overseas.

1.9. The impact of 9/11

The public is not that highly aware of teleconferencing technology even after 9/11. Using a newspaper database service that allows searches through 36 of the nation's leading newspapers produced only two articles briefly mentioning the impact of the 9/11 in relation to conferencing.

And one medium-sized, domestically operated company with 50 employees said to me, "Conferencing is nothing less than additional cost; we do not see any benefit of that technology for us even after 9/11. And we prefer in-person meetings rather than virtual ones."

However, the impact of 9/11 was felt in Japan especially among companies operating globally. The level of effect in Japan is not as high as that in the United States and is a limited one, but to some extent, conferencing has gathered more attention to the technology as a potential communications tool for globally operated large companies.

Especially companies that have operations in the United States have seen an increase in telecommunications traffic going over the Pacific Ocean because of the tragedy that has put them all in a state of being cautious about traveling. Rather than flying to the United States, they instead took advantage of conferencing when communicating with their colleagues and counterparts in the United States.

The impact of 9/11 has led to more customer inquiries to providers of audio and video products and services. One conferencing vendor admitted that it was busy taking care of phone inquiries and making arrangements for temporary use of audio and video meetings between Japan and the United States after 9/11. According to a report that appeared in [JapanInc. Magazine](#) in the January 2002 issue, another conferencing service provider, Face to Face Communications, experienced triple growth in use of its service after 9/11. According to [Nikkan Kogyo Shimbun \(newspaper\)](#) dated October 16, 2001, [KCOM](#), a video bridging provider, a subsidiary of [KDDI](#) in Japan, saw 50% increase in international bridging. And [NTT Phoenix Communications](#), another video bridging provider, also spends busy days taking phone inquiries and reservations for bridging services.

As for sales of endpoints directly affected by 9/11, a certain vendor told me that it does not have sales that turned into money directly affected by 9/11, even though the company got plenty of inquiries from potential customers.

1.10. How conferencing is treated in Japanese newspapers

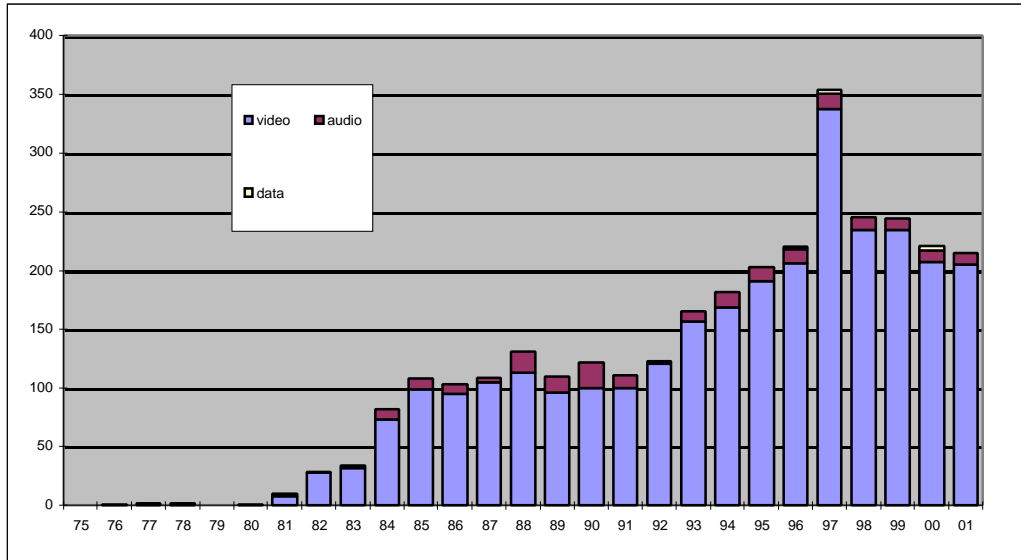
We just checked how many news articles treated conferencing since 1975, but contrary to our expectation, they focused mainly on video conferencing rather than audio conferencing, and very few on data conferencing. But certainly the number has been growing year by year with a huge hike in 1997.

We surveyed this number based on a newspaper database service called [Nikkei Telecom 21](#) that allows searches through 36 nationwide newspapers and dozens of magazines published in Japan.

As mentioned above, there is a single-year hike we see in 1997 which is due to the fact that NTT launched various videoconferencing-related products and services such as Phoenix Series (H.320 set-top and videophones), and established a subsidiary called [NTT Phoenix Communications](#) that provides bridging services in Japan.

NTT is the largest telecommunications carrier in Japan and its move in any direction grabs media attention to a large extent; therefore, the year saw the exceptional hike.

Figure 11. The number of articles that had a word, “conferencing” in headline



*Survey based on Nikkei Telecom 21 newspaper and magazine database service.

The topics treated in the articles vary; they treat not only vendors’ product launches, but also case studies such as how videoconferencing is used in the government, banks, schools, manufacturing companies etc.

It is found that there was a slight downturn in 2001 from 2000 but in the first 3 months of the year 2002, there have been 99 articles related to conferencing in Japanese newspapers and visual communications is getting more attention from the media. Reasons for that are threefold. (1.) The introduction Windows XP into the market. (2.) The recent increasing trend for broadband IP with price drops by roughly 50% of PC cameras available in the ¥5,000 to ¥6,000 range. (3.) [DoCoMo](#) (3G FOMA) and [Microsoft Japan](#) (Windows XP) are spending huge amounts of money on TV commercials to promote visual communications. We will be seeing more articles appearing in Japanese newspapers toward the end of this year.

Here are a couple of examples of articles in Japanese newspapers to explain how the Japanese media are reporting on conferencing. The first example is an article dated July 5, 2000 in [Nikkei Sangyo Shimbun \(newspaper\)](#), reporting that Mitsubishi Agricultural Machinery Co., Ltd. with 1190 employees deployed videoconferencing systems along with other IT technologies such as e-mail to reduce costs associated with business traveling. Since the videoconferencing system was put in place, the company has conducted 300 video meetings yearly and could slash costs by ¥100 million.

Another article dated June 25,1999 in [Nihon Keizai Shimbun](#) reported that [Tanabe Pharmaceutical Co. Ltd.](#), with 3,846 employees, deployed 34 video endpoints at 32 domestic locations purchased from [Sony](#) at a cost of more than ¥70 million. With this deployment, Tanabe tried to reduce travel costs by ¥20 million and time associated with travel by 5,000 hours.

These are almost likely case studies appearing as articles in the newspapers, and in many

cases, they report how conferencing technologies were implemented in relation to management issues such as restructuring and streamlining of business processes. However, product launches were reported as well.

1.11. CO₂ or carbon dioxide emission vs. videoconferencing

In 2001, the Ministry of Post And Telecommunications (now called the [Ministry of Public Management, Home Affairs, Posts and Telecommunications](#)) reports, based on analysis and prediction that, by the prevalence of videoconferencing usage in organizations and teleworking or telecommuting, Japan can reduce carbon dioxide emission by 406 million tons, roughly 1/3 of Japan's total emission of 1.18 billion tons (Y1998 data). And [NTT East](#) also estimated videoconferencing that replaces traveling can slash CO₂ emission by public transportation by 80%.

As Japan is trying to ratify the Kyoto Protocol that the US government rejected, videoconferencing and audio conferencing may get more public attention and Japanese may start considering using the tools to reduce carbon dioxide emission.

1.12. Revision in Japan's corporate law

[The Ministry of Justice](#) has conducted a series of studies to revise the corporate law, that is effective nationwide in Japan unlike in the US where law varies slightly state by state, to explicitly allow companies to use IT technologies in shareholders' meetings or board of directors' meetings, which means that companies can have such meetings electronically among dispersed locations. This planned revision will also allow the use of e-mails for announcement of the meetings and for polling. In a word, the Ministry's intention is to allow electronic meetings so that it may help companies to streamline their meetings and in the end to improve overall productivity.

So far, according to the Ministry, they have said that use of videoconferencing for legally defined meetings such as shareholders' meetings or board of directors' meetings is not a problem if companies abide by the guidelines published by the Ministry in 1997, even though the corporate law has not articulated the justification of videoconferencing usage in such meetings.

The guideline was complicated and requires companies to install a high-end videoconferencing system with multiple monitors. So it actually did not much contribute to the promotion of videoconferencing usage in companies. But when the law is revised, it may help leverage the benefits of videoconferencing by allowing companies to hold such meetings electronically.

1.13. Teleworking and satellite offices

According to [Japan Telework Association \(JTA\)](#), there were 2.46 million workers (about 3.6% of the 67.6 million total employed population in Japan) stationed at satellite offices or working in teleworking environments in 2000 in Japan, which is expected to increase up to 3 million by the end of fiscal year 2002 and up to 4.45 million in 2005. And JTA also forecasts that there will be 4 million SOHO workers by the end of fiscal year 2002.

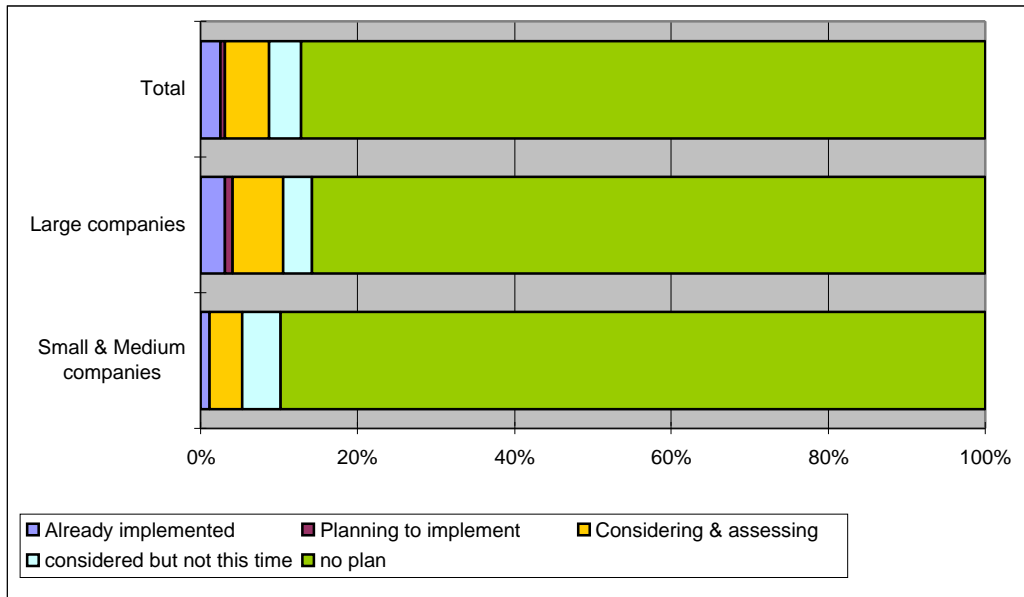
Large companies such as [NEC](#), [IBM Japan](#), [Hitachi](#), [Matsushita](#), and [SGI Japan](#) are providing teleworking environments for their workers to increase productivity. For example, IBM Japan has its 500 employees telework from their homes one or two days in a week by covering their communications charges such as ISDN and ADSL and also by subsidizing purchase of PCs for use in their homes, according to a news report on June 6, 2001 by Nikkei Shimbun.

[The Japanese government](#) has announced that it would support and subsidize projects to promote teleworking environments throughout Japan and give tax credits or loans at lower interest rates to those organizations that have plans to implement teleworking or satellite offices.

And there are some projects nationwide to establish teleworking centers so that local inhabitants can share the centers to reduce the burden associated with commuting to their remote offices, to create more jobs by allowing the aged, the handicapped, and the pregnant to be able to have job opportunities and hence stimulate local economies.

A survey conducted in 2000 by [Japan Information Processing Development Corporation](#) found that just 2.5% of companies surveyed said that they were using teleworking or satellite offices but 87.2% said that they did not have plans right now to implement teleworking in their organizations.

Figure 12. Teleworking and satellite offices implementation in corporate organizations



*The year 2000 survey on computer usage in corporate organizations by Japan Information Processing Corporation

1.14. Conference call or earnings calls

Earnings call services usage in Japan by big companies has been gradually increasing over the last several years. Unlike the US, it is a small market and just a few large companies and banks that operate globally or that have overseas investors are using such

services as a part of an effort to have a better relationship with their stakeholders.

In March 2000, [E-Associates, Inc.](#), a venture startup, launched a service called “Company Hotline” on its web site where it provides a schedule of upcoming earnings calls and an archive service along with audio and data bridging services for companies and stakeholders. And as the pioneer, it gained major banks and companies in Japan as its customers.

After looking at the success of E-Associates, we have seen some new competitors such as [Daiwa Investor Relations Co. Ltd.](#) (e-Cast), [Yahoo!](#) (Net RoadShow Direct) and [J-Stream, Inc.](#) coming into the IR business.

According to [Nomura Investor Relations Co., Ltd](#) in a [Nikkei Financial Shimbun](#) article dated November 15, 2001, demand for this kind of conference call service is gradually expanding. And the article added that as of June 2001, there were 189 companies in Japan using that kind of service, and for mid-fiscal year earnings calls that usually take place between October and November, there would be more than 230. (In Japan, there were approximately 2.54 million legally registered companies in 2000 according to [National Tax Agency.](#))

1.15. Mobile Phone phenomena, a catalyst for change in conferencing

Conferencing in Japan may be changed by recent trends in mobile phone services. The advent of 2.5G mobile phones with embedded cameras, and 3G service has raised awareness of visual communications.

[Sha-mail](#) service is a big hit in the recent mobile market in Japan. It was even called a “social phenomenon.” Sha-mail service is provided by [J-Phone](#), a mobile phone service provider, a subsidiary of [Japan Telecom](#) (recently purchased by Vodafone). Sha-mail is a service that allows subscribers who have mobile phones equipped with embedded cameras to take relatively high resolution color photographs using the embedded camera and send them over mobile phones.

It is especially popular among younger generations, teenagers and people in their 20s. It is said that more than 4 million users (33.5% of J-Phone subscribers) are using Sha-mail. They take photos of themselves, sometimes kissing faces with a short message saying, “This is my feeling right now,” or showing where they are, or parties they are holding, etc. Sha-mail is used for many other consumer-oriented applications.

According to a [Nihon Keizai Shimbun](#) article dated November 28, 2001, DoCoMo handles 1 billion SMS daily, but 90% of them are spam direct mails that cannot reach their destination receivers because of incorrect email addresses. However, there are 15% of DoCoMo i-mode subscribers who receive more than 15 SMS daily. A recent television program featured a junior high school girl (12 years old) saying that she is usually sending and receiving 10 SMS daily, or sometimes more, by using mobile phones.

The young people who are using the SMS service were using pagers three to five years ago. It was once very popular among teenagers to use pagers to send short messages to their friends. Most of the teenagers who were using pagers at that time got bored with them with the advent of mobile phones with SMS capability. Pager service was once a big hit but now no one even looks at it any more.

Now young people especially are using something akin to SMS with a picture attached. J-Phone is introducing video Sha-mail, which is like a 5-second short video mail service, to further promote visual communications. KDDI(au) is now offering mobile phones with

embedded cameras and GPS capability in the marketplace so that users can send not only pictures but also maps over mobile phones at the same time. NTT DoCoMo just announced in April 2002 that it will also try to catch up with J-Phone by offering mobile phones with embedded cameras beginning in June.

This trend is clearly in line with the evolution from simple voice communications, SMS, still image mail, video mail, to real-time video communications. Once video mail becomes the next popular service in the near future, we can assume that people will then turn to real-time video as a natural extension. When teenagers start working in offices within 10 years, they may become the prime drivers for conferencing usage in corporate organizations.

[Macromill, Inc.](#), a research firm in Tokyo, recently released a report on mobile phone services. Macromill found that 94.7% of 522 people (20s and 30s comprising 71.3%, male 40.6% of the total number) who responded to the survey said they recognized Sha-mail service. As for [FOMA DoCoMo's 3G service](#), 67.8% said they recognized it, or 26.9% less than those recognizing Sha-mail. And 47.5% of those surveyed said they want to buy mobile phones equipped with cameras; 30.8% said that they want to use wireless videoconferencing despite the fact that 75.3% said that it seems too expensive to subscribe to the FOMA service right now.

However, although the public thinks that FOMA is still expensive, since its introduction in October 2001, DoCoMo has gained 89,400 new FOMA subscribers as of March 30, 2002, 50% of which are said to be wireless videophone users. Prices for wireless videophones are around ¥50,000 at reseller shops in Tokyo. It is still an expensive thing to buy and not justifiable enough for ordinary consumers to spend that amount on wireless mobile phones. With that money, they would rather buy PDAs or hand-held computers etc. right now. However, if the prices drop and DoCoMo offers a wider line-up of wireless videophone models, it may change something.

DoCoMo is taking measures to promote the use of real-time video communications. It just announced, in March this year, "[D2101](#)" (made by Mitsubishi), another model of wireless videophone terminal. And models that will be coming out from now on will be equipped with small, embedded cameras that will allow wireless real-time video. Rumor says that Sharp is going to introduce "SH2101V," a PDA type FOMA terminal with a built-in camera to allow video communications, in June 2002. The price will probably be around ¥60,000. It will also have Bluetooth capability.

This fall, DoCoMo is going to start a multipoint bridging service for FOMA wireless videophones to allow multiple FOMA sites to be connected over an MCU.

Some companies are trying to create some business by leveraging FOMA's wireless videophones.

[NTT Broadband Initiative, Inc.](#) has launched "BROBA chat," an IP video chat service with a gateway to allow PCs to communicate with FOMA's wireless videophones this April.

[Amviy Co., Ltd.](#) has just started "Palm Education," an interactive language training service using FOMA's wireless videophone. With this service, you can take training courses anytime and anywhere.

To compete with [DoCoMo](#), on April 1, 2002 [KDDI](#) launched CDMA 2000x1 service in major cities in Japan. KDDI has adopted CDMA rather than the widely used standard called PDC which was initially developed by NTT and adopted by NTT DoCoMo and [J-Phone](#). PDC, unlike GSM, is only used in the domestic Japanese market.

KDDI is offering services such as GPS locating, streaming video, gaming, wireless data service at 144kbps later to be extended to more bandwidth, etc. As for real-time video,

KDDI thinks right now that it is still premature to introduce wireless videophones into the market, but has recently introduced mobile phones with embedded cameras to allow users to send color pictures over the mobile phone.

All of these mobile wireless video trends may create a synergy for conventional video communications. The prevalence of electronic communications devices such mobile phones with embedded cameras and FOMA-type real-time videophones will probably raise the level of public awareness towards more use of conferencing.

2. Overview of leading vendors and service providers in Japan

2.1. Overview

We have recently seen some vendors or service providers either domestic or overseas coming into the Japanese market. Some of them are, for example, [First Virtual Communications](#) launching its subsidiary in Tokyo in December 2001, [WebEx](#) partnering with [NTT-ME Corporation](#) (October, 2001) and [Cybernet Systems Co.,Ltd.](#) (December 2001) to launch a web-based collaboration service in Japan. And in the services sector, [Japan Telecom](#) and [BT Conferencing](#) launched an audio and video bridging service February, 2002.

Together with that, we have observed some vendors from Korea and Taiwan providing either endpoint products or collaboration solutions, and some others are providing IP video chat services or interactive training service for 3G wireless videophones. Things are seemingly getting active, especially with broadband services becoming more prevalent in both business and consumer locations, combined with the recent reluctance to travel overseas.

When it comes to network components such as MCUs and gatekeepers, [RADVision](#) is probably going ahead in the market offering the full range from its MCU to gateway and gatekeeper. Apparently, Hitachi is the only Japanese maker of MCUs but it does not have a gateway and gatekeeper products like RADVision. As of February, RADVision does not have its subsidiary in Japan but is closely working with NTT-ME and other partners in Japan to accelerate their business.

To further promote these recent trends in Japan, in November 2001, the “[Visual Communication Association](#)” or industry forum was established by founding members of [NTT DoCoMo](#), [Polycom](#), [Sharp](#), [Tandberg](#), and [TOMEN Cyber business](#) with the purpose of promoting the use of visual communications throughout Japan. The forum’s activities have started with 15 new joining members and they have a plan to gain another 35 new members by the end of 2002.

Despite these favorable movements, some players are coming in but some others are going out because they see conferencing-related business is not so meaningful in terms of business feasibility or they think it is premature to be involved fully in this business, even though some others are making profits from the business.

[Fujitsu](#) and [Kyocera](#) used to develop, manufacture, and market videoconferencing endpoint products but they left the market a couple of years ago. And [Cannon Sales](#) used to sell a desk-top videoconferencing system, but now seemingly is no longer working on that,

and instead is more focused on selling Polycom video endpoints domestically. [Alps Electric Co. Ltd.](#) (December 2000) and [Kubota Systems Inc.](#) (April 2001) have given up on pursuing desktop video system business and have shifted their focus onto other IT technologies. [Casio Computer](#) used to sell LT-70, consumer set-top videophone from February 1995 whose codec was based on CATN, Casio's proprietary technology designed to be operated on the PSTN at 14.4kbps. The price was ¥98,500.

[VCON](#) and [VTEL](#) used to have their offices in Tokyo but not any more. But they may come back again as the video-related market grows in the years to come and we see some active moves among foreign vendors and service providers aiming to enter the Japanese market.

As for the services sector, [Mitubishi Electric Information Network Corporation](#) based in Tokyo apparently terminated its video bridging service a couple of years ago and reorganized its business, shifting its business focus more onto data center and Internet-related solution business.

Even though it is not reported in this version of the Japan report, there are some companies in and outside of Japan that are planning to come to Japan for business. And as far as I have researched, there are at least 12 Korean vendors of conferencing products and 2 Korean service providers. As for Taiwan, there seems to be a dozen companies. And many of them are aiming at the Japanese market. These companies can be reported in possible future versions of this report as we confirm their entry or presence in Japan in months to come. And, in addition, we may be able to cover the teleconferencing market in these countries as well in the future, because these countries are untapped areas of the world in terms of conferencing. It is worthwhile and intriguing to look into these countries as well.

Companies below are those I try to provide an overview of for your reference.

2.2. Audio / group / desktop / videophone / MCU endpoint vendors

2.2.1. Advanced Solutions Inc.

[Advanced Solutions](#), established in March 1989, is based in Tokyo with 15 employees to develop, manufacture and sell solutions such as “impression office (LaMail)” which is a groupware solution, and “impression live” and “moNet,” a visual communications solution that supports UNIX, Windows OS and Mac OS. The company has a research center in San Jose, California, USA.

“Impression live” is a desktop videoconferencing system that runs on an IP network with the company's proprietary protocol. It comes with a PC camera, software, and video capture card (PCI) at the price of ¥92,000 per unit with whiteboarding, file transfer, and text chatting capabilities. There is a USB-type package as well which is ¥95,000. There is a special discount for educational institutions.

If you need to have multipoint meetings with the products, you need to purchase the “conference kit” with a license fee starting at ¥650,000 for 10 users.

“MoNet” is a collaborative desktop visual communications solution especially designed for educational institutions, allowing users to have distance learning applications with multiple sites connected over a conference server. The license for the system starts at

¥250,000 for ten users. The users need to install client software (Japanese/English) to log onto the server to run meetings.

2.2.2. Hitachi, Ltd.

[Hitachi](#) sells “VCS,” the brand name for its “HV-31” H.320 videophone and “View Work CA-41” set-top videoconferencing system along with a surveillance system and MPEG-2 codec, but Hitachi is more focused on providing solutions to their customers rather than selling each endpoint product. Hitachi offers solutions related to remote surveillance and telemedicine.

The company also sells the MC-400 MCU or Multipoint Control Unit that allows bridging up to 16 endpoints, but by cascading it will allow a maximum 239 endpoints.

2.2.3. K&M Enterprise, Co. Ltd.

[K&M](#), established in January 2000 with 42 employees and capital of ¥255 million, has developed and manufactured a proprietary IP desktop videophone called “Pasotel II” whose price is ¥19,800. The product came out in December 2001.

K&M’s head office is located in Kita Kyushu in Kyushu Region with a branch office in Tokyo. The company holds a patent on “KAM,” its proprietary visual compression technology, and has developed some solutions such as surveillance systems.

K&M established [Broadband Co. Ltd.](#), headquartered in Kita Kyushu, in July 2000 to provide “MIL/VANUS,” an IP videophone service connecting “Pasotel II” users. The basic monthly charge is ¥500 with unlimited usage.

2.2.4. Laksmi-Do Corporation

[Laksmi](#) is a software developer specializing in areas such as IP video (Lim/TelePone), audio and video streaming, and remote surveillance systems using DoCoMo’s i-mode.

Client software (approx. 5MB) for “Lim” costs ¥48,000 and the server software costs ¥96,000 for a 20-user license supporting up to 50 simultaneous connections.

“Telepon” is “lite” client software whose size is about 2MB. It is free software. For bridging needs, Laksmi provides a ¥2.4-million package that includes “Banja” conference server software that allows up to 2,000 simultaneous endpoint connections and includes remote control console software and “Telepon” client software.

2.2.5. Leadtek Research Inc.

[Leadtek](#) is a Taiwan company that sells 3D graphics, motherboards, GPS navigation systems, video surveillance systems, and videoconferencing systems. The company has offices in the US, Europe and Japan.

As for video products, the company sells H.320/324/323 standalone videophones and set-top videoconferencing systems. Actually it has 8 systems in its video product line such as BVP8770/8750(H.323), IVP256 (H.320), and TeleVyou TV-400PSTN (H.324).

In November 2001, Leadtek made an agreement with [NTT-ME](#) to resell Leadtek's "i-See" H.323 stand-alone videophone whose price is around ¥128,000 per unit. The product started shipping on December 1, 2001 with a sales revenue target of ¥200 million by the end of March 2002.

2.2.6. Matsushita Communication Industrial Co., Ltd.

[Matsushita Communication](#) sells roll-about H.320 videoconferencing systems with embedded MCU capability allowing simultaneous 3-site connections. It is called "TeleMeet 100" and has a price of ¥2.68 million.

In January 1997, Matsushita Communications announced that it started selling "WG-MP104" an MCU with a base price of ¥3.3 million with the plan to produce 500 MCUs per year. With the base MCU, the user could hold meetings with up to 4 sites simultaneously connected, or up to 8 sites with an added capacity expansion unit. And 4 quad-continuous presence functions was an option as well.

Seemingly Matsushita gave up on this eventually.

2.2.7. Mitsubishi Electric Corporation

[Mitsubishi](#) sells "MELFACE 895/880" (¥980,000 or more), an H.320 set-top videoconferencing system, and "VP-200-J," an H.320 videophone (¥95,000). Mitsubishi brought "MELFACE 895" onto the market in August 1997 with the plan to sell 200 units per year.

Since the first release of NTT's H.320 videophone called "PhoenixMini" in 1997, Mitsubishi has had an OEM agreement with NTT in which Mitsubishi supplies its videophone to NTT. The current VP-200-J is sold by NTT under the name of PhoenixMini Type-M.

2.2.8. NEC Engineering Ltd.

Up to the end of the year 2000, [NEC](#) itself manufactured and sold videoconferencing systems, but after that time NEC Engineering took over the responsibility. [NEC Engineering](#) was established in June 1975 and business revenue for fiscal year 2000 was ¥49.3 billion with about 2,500 employees.

NEC Engineering sells both audio and video conferencing endpoint products and associated system solutions only in the domestic Japanese market. However, it is not solely focusing on conferencing business. It is closely working with its parent company NEC to develop solutions for customers in various areas, such as fire prevention and data processing.

NEC Engineering sells an audio endpoint product that can be used on the PSTN, and now is planning to sell an IP-compliant audio endpoint product or "VoicePoint IP model" that is scheduled to come out in the beginning of August this year. NEC Engineering's current audio endpoint product, "VoicePoint IP Basic model," is priced at ¥148,000 with only a PSTN port. But the IP model will have both PSTN and Ethernet (10/100M) ports.

As for video, the company focuses on high-end endpoint products that can be operated

on both ISDN and IP infrastructures. “VisuaLinkTC5000EX100” is a high-end H.320/323 codec whose price starts at ¥1.95 million. NEC Engineering also provides “VisuaLink7000EX,” an MPEG-2 codec product that can be used in a video network for broadcasting and interactive video communications. As for mobile streaming, the company sells “MediaPoint Mobile” that allows live streaming from mobile phone terminals running from 4.8kbps to 64kbps.

It is said that NEC Engineering is strong at selling into government sectors. And according to [NikkeiBP](#)'s *Nikkei System Provider* magazine dated September 28, 2001, NEC Engineering shipped 1,350 units of video endpoint products for the year 2000.

2.2.9. Miyagi NEC, KK

[Miyagi NEC KK](#) was established in September 1973 as an NEC group company, and located in the Miyagi Prefecture in Tohoku Region, about 250km north of Tokyo.

The company generates ¥84.7 billion in yearly revenue with 430 employees and has customers in 100 countries around the world. Its business focus is mainly in the field of devices for DWDM, SONET, DSLAM, and IP routing.

Besides the aforementioned business, Miyagi NEC also sells audio endpoint products that are marketed in Japan's domestic market. The product is called MT-16; its end-user unit price stands at ¥65,000.

2.2.10. NetCom Co., Ltd.

[NetCom](#), based in the vicinity of Akihabara in Tokyo, was established in May 1998 as a venture company. NetCom offers a systems integration consulting service specializing in Internet-related areas including video communications.

Net@Phone was developed by Laksmi-Do Corporation based in Nara, located in the south of Osaka, and NetCom markets the software, which fits onto a floppy disk.

Net@Phone client software is downloadable from NetCom's web site free of charge but requires users to purchase “Net@Server” conference server software to support multipoint bridging. The license fee, starting at 10 users, costs ¥1.05 million. But if you need to add another 10 users, it costs only ¥100,000. NetCom also provides service coverage from installation to technical support.

Major purchasers of the Net@Server software are NEC, Fujitsu, NTT DoCoMo, NTT-West, KDDI, and Educational Information Center of Chiba Prefecture.

Mr. Sachio Senmoto is supreme advisor for the company. Mr. Senmoto is a very well known expert in venture business and was a co-founder and a vice president for DDI (now KDDI), the second largest telecommunications carrier after NTT. He is now CEO of E-Access, an ADSL service provider. He has experience in teaching venture business both in Japan and the US.

2.2.11. OSAMU Corporation

[Osamu](#) sells “OSAMU Communicator1,” a proprietary desktop videoconferencing system that was first released in 1997. The product used to be sold in a package bundling a

PC camera, but now Osamu sells only software at ¥4,800 per license. The product is using “Dual Speech,” a software codec developed by [NTT Cyberspace Laboratories](#). The product runs on PSTN, ISDN, LAN, Internet, and PHS.

The company was originally established in 1989 and now has six engineers. They have been involved in not only visual communications development, but also other systems development, closely working with NTT on many projects.

2.2.12. Polycom Japan KK

[Polycom Japan KK](#) was established in June 1999 in Tokyo with capital of ¥10 million. Polycom Japan and former PictureTel Japan were merged on January 1, 2002 to become one corporate entity. They are now based in a building formerly housing the headquarters of PictureTel Japan with a branch office that was formerly PictureTel Japan’s in Osaka.

Their businesses are getting favorable wins for themselves, and their unit shipment of products has almost doubled over the past year, reaching 4,500 in 2001 according to [Nihon Keizai Shimbun](#) (newspaper) dated January 21, 2002. And the company has partnered with Japan’s leading companies such as [Daito Electron](#), [Canon Sales](#), [Otsuka Shokai](#), [Hitachi Cable](#), and [Princeton Technologies](#) for distribution of their products in the Japanese market.

Polycom Japan has started shipping “PathNavigator,” a call processing server, beginning April 12, 2002 in Japan with the minimum price of ¥1.89 million with 100 licensed users.

2.2.13. Sharp Corporation

[Sharp](#) does not sell its own videoconferencing systems or videophones under its own brand name, but made an agreement with former PictureTel in August 2000 regarding the development of PictureTel iPower. And it is said that Sharp supplies H.320 videophones to NTT to be sold under NTT’s brand name “PhoenixMini Type-S.”

According to news article in [Nikkei Sangyo Shimbun](#) dated August 29, 2000, Sharp has the intention of getting into this videoconferencing business sooner or later.

2.2.14. Sony, Inc. / Sony Marketing, Inc.

[Sony Marketing](#) is a subsidiary of the [Sony](#) parent company and has been responsible for the marketing and sales of Sony’s videoconferencing systems such as PCS-1600 and PCS-6000.

The company is particularly strong in the educational market and has been accelerating its business not only in the educational market but also in others. It either directly sells its equipment to customers or uses a number of resellers including OS Corporation based in Tokyo.

Like Polycom, Sony Marketing doubled its sales over the past year, reaching 4,000 in the year 2001, and it expects to see further increases in its sales in the years to come.

2.2.15. Tandberg Japan Office

[Tandberg Japan Office](#) opened last summer to boost Tandberg's sales in the Japanese market. Based on statistics released by [NikkeiBP](#)'s IT magazine, called *Nikkei System Provider*, Tandberg's sales in Japan are not as strong as its own worldwide sales but, step by step, the company is creating and building its own brand.

The company has partners in Japan such as VTV Japan, Japan FA Systems, and Onkyo Tokki.

2.2.16. Universal Microelectronics Co., Ltd.

[Universal Microelectronics](#) is a Taiwan-based company with sales offices in the US, the UK, Germany, and Hong Kong. But the company apparently has a reseller in Japan, [Remote System Japan Co., Ltd.](#)

Universal Microelectronics sells H.324 set-top (CU10/CU500/CU501J) video systems and a standalone videophone (CU700).

2.2.17. Uniform Industrial Corp.

[Uniform Industrial](#) is a Taiwan-based company that sells a Magnetic Stripe Device and set-top video conferencing system (STB-128/384) that runs on both ISDN and IP networks. Both products comply with H.320 and H.323. The company also sells a PCI card that is used to add data collaboration functionality to audio or video conferencing.

But as of now, Uniform Industrial has a subsidiary in the US and partners in Europe but not in Japan. It is trying to find a partner in Japan to sell its products into the Japanese market.

2.2.18. VCON Telecommunications, Ltd.

[VCON](#) used to have its office in Tokyo located in a Sumitomo Corporation building, one of Japan's leading trading firms. VCON once tried to open up its sales office outside of the Sumitomo building to accelerate its business in Japan, but at the beginning of 2001, it closed the office.

VCON's current partners in Japan are [Nippon Systemware Co. Ltd.](#) and [LogIT Corporation](#) (LogIT is going to halt its business temporarily beginning July 2, 2002 for an unspecified period.)

2.2.19. VTEL Products Corporation

[VTEL](#) also used to have a Japan office, but wrapped up its office a couple of years ago and now entirely relies on its Japanese partner, VTV Japan, which is the sole VTEL partner for Japan market. But the company has a web site in Japanese that introduces VTEL's products.

2.2.20. WOOKSUNG Electronics Inc.

[WOOKSUNG](#) is a Korean company based in Seoul, established in February 1995. The company sells H.323 and H.320 standalone videophones, called “TelePhoSee WVP-2000” and “TelePhoSee WVP-1000” respectively. It also sells “TelStar,” a desktop videoconferencing system with embedded MCU allowing three sites to be connected at the same time.

As far as I could tell from talking with company representatives at COMDEX Fall 2001, WOOKSUNG directly sells its products to Japan if it receives any purchase orders. And the products are available also in Japanese versions. The price for the “TelePhoSee WVP-2000” is \$600 US per unit.

WOOKSUNG also deals in a 1 Port VoIP Gateway in addition to video products.

2.3. Service Providers

2.3.1 E-Associates, Inc.

[E-Associates, Inc.](#) is a venture startup whose CEO is an ex-banker who has extensive overseas experience through working at several non-Japanese banks in his past career. The company launched “Company Hotline” service on its web site which provides information on schedules of upcoming earnings calls. It also offers an archive service and audio and data bridging services to offer real-time interaction between companies and their investors or stakeholders. E-Associates has been considered as a pioneer in Japan with regard to earnings call services. It has gained major clients such as [Oracle Japan](#), [Mitsubishi bank](#), and [Mizuho Financial Group](#) and its business is expanding.

2.3.2. Face To Face Communications, Inc. (FTF)

[FTF](#) is based in Tokyo and offers a public videoconferencing room service whose sites are located in Tokyo at places such as the [American Chamber of Commerce in Japan](#) Videoconference Center and the [Park Hyatt Tokyo](#) Business Center. The company has a site in Hong Kong as well. FTF also provides the FTF worldwide directory online service for its customers to book public video rooms around the world in cooperation with overseas partners such as [Proximity](#) and [Affinity VideoNet](#).

In addition, FTF provides a videoconferencing system rental service for events or short-term business use.

2.3.3. GingaNet KK

[GingaNet](#) is a subsidiary of [NOVA](#), a leading language training school whose headquarters is based in Osaka, providing “Ginga Meeting Net Service,” H.320 video bridging for both consumers and business and selling H.320 set-top videoconferencing products that can be placed on the top of TV monitors. The video bridging offers voice activation and quad-split continuous presence. GingaNet now has 300 corporate users according to a [Nikkei Sangyo Shimbun](#) article dated February 1, 2002.

Together with NOVA, GingaNet offers a “24/7 language training at home service” allowing students to take part in the training from their home or office via quad-split continuous presence video. The videoconference is usually conducted with one teacher and three students participating from their respective remote locations. It is said that more than 20,000 of the 300,000-plus NOVA students are using this video training service throughout the nation.

In addition to the conventional bridging service and the video training, GingaNet offers video remote services such as video consulting on real estate and studying abroad, remote travel agent, shopping (in which a remote operator explains the products sold), remote PC training for beginners, and remote teacher or tutor service for students from primary through high school preparing entrance examinations.

NOVA, which offers language training services, has yearly sales revenues of ¥51.9 billion (48% market share in the language training service market) with more than 500 branches (schools) and 300,000 students.

2.3.4. Japan Telecom/BT Conferencing

[Japan Telecom](#) (JT) is a newcomer in this playing field of bridging services with [BT Conferencing](#)'s partnership. Japan Telecom began the business on February 1, 2002. It has announced that it started the business by leveraging BT Conferencing's experience and know-how in the conferencing business, but at the beginning the business will be limited to audio bridging, H.320 video at 128kbps, 256kbps, and 384kbps and later JT will broaden the portfolio of services. Enhancements to the service will include continuous presence, meeting recording, polling, and Q&A session management services. The company has a transparent walled room equipped with a room videoconferencing system located at the entrance of its headquarters in Tokyo for its internal use and for its customers.

Based on the playbook publicized by JT, the company has a plan to gain 30 customer companies by March 2002 and an additional 150 by March 2003.

Speaking of JT's history a little bit, the company was established in 1984, with the then largest shareholder being Japan Railway group, initially to compete in the long distance phone service market with NTT, which was privatized in 1985. Among shareholders, [British Telecom](#) and [AT&T](#) used to hold 15% share each, with [Vodafone](#) holding 7.5% in Japan Telecom, but BT and AT&T later sold their shares to Vodafone along with some other shareholders. So JT is now owned by Vodafone and has William Morrow as President after extensive purchase of Japan Telecom's shares, making Vodafone's share 60% of the total recently. Vodafone also owns J-Phone, a mobile phone service provider, a subsidiary of Japan Telecom.

2.3.5. KCOM Corporation

[KCOM Corporation](#), based in Tokyo, is a [KDDI](#) group company, providing a video bridging service in Japan. Along with the bridging service, KCOM also offers a public videoconference rental room service, event management using videoconferencing systems, and consultation services for companies considering implementation and deployment of videoconferencing equipment and systems.

2.3.6. KDDIS, Inc.

Tokyo-based [KDDIS](#) has been in the audio bridging service since June 2000. The service is called "Denwa de Kaigi" or Meeting by Phone. KDDIS was established as a subsidiary of KDDI in June 2000. Initially the company name was KDD Information Systems, but the name was changed in June 2001 to KDDIS.

The KDDIS service is basically reservation-less, allowing users to connect up to 32 endpoints simultaneously. To use the service, a user is required to register, which is free of charge, but it takes a couple of days to process the registration and the host of each meeting also needs to have a PC connected to the Internet for reserving meetings, controlling the

duration of meetings and each endpoint participating in the meetings and so on. KDDIS apparently offers a ¥20 per minute rate, apparently the lowest price for audio bridging in Japan.

KDDIS's business is not only focused on conferencing but also on server rental, server housing, and web content creation services.

2.3.7. KDDI TeleServe, Inc.

[KDD TeleServe](#), based in Tokyo, offers an audio bridging service as a part of its language service, along with document translation and 3 way-phone call translation services. The audio bridging is usually accompanied by an interpreter to handle simultaneous translation between Japanese and foreign languages, but requires advance reservation. There is no dial-in bridging, only dial-out calls initiated by KDDI TeleServe operators.

The company's business is not limited to the aforementioned services; KDD TeleServe also provides a human resource replacement service and temporary staffing service as well.

2.3.8. Marubeni Telecom Co., Ltd

[Marubeni Telecom](#) is a subsidiary of [Marubeni Corporation](#), a global trading company. The company provides an audio conferencing service along with reselling the [Latitude Communications](#) "MeetingPoint" bridge and [NEC](#)'s "VoicePoint" audio conferencing endpoint. Marubeni Telecom's business focus is not only on teleconferencing but also on reselling mobile phone service subscriptions and on system integration services. The company also distributes and resells "MeetingPlace 2000," a media server manufactured by US-based Latitude Communications.

As for the company's audio bridging services, there is (1) a full-time service that has a monthly flat rate, (2) a 10-minute increment usage charge on-demand service. Each of them is charged per endpoint. And if you are using the service more than 28 hours, it is better to choose the first price option.

The services are not reservation-less, therefore you need to book a meeting in advance by sending the company a fax form. And the MCU is located only in Tokyo.

2.3.9. NTT Communications Corporation

[NTT Communications](#), a subsidiary of [NTT](#), announced on January 28, 2002 that it would launch "ClearConference Service," a reservation-less audio bridging and data collaboration service, immediately after the company reports to the Ministry of Public Management, Home Affairs, Posts and Telecommunications. NTT Communications will provide this service via a partnership with [iTelco Communications Inc.](#) based in San Jose C.A.

iTelco mentions in its press release dated January 30, 2002, that ClearConference allows subscribers to hold on-demand conferences at any time from anywhere without making a reservation in advance. Future conferences may also be scheduled through the web, with e-mail invitations automatically sent to participants. During a conference, the chairperson

can: simultaneously dial out to a group of participants by just clicking a single button, and mute, disconnect, or place on hold any of the participants, through either the web or the phone interface. Additional features such as digital recording of the conference, synchronized online presentation by any of the participants, private text messaging, and integrated address book complement the audio conferencing features.

2.3.10. NTT Marketing Act Corporation

NTT Marketing Act is based in Osaka and offers an audio and data bridging service called “Chorusline.”

“Chorusline” was formerly provided by NTT Dynamic Telma, whose headquarters were based in Osaka; the company was established in August 1986 to pursue telemarketing business as a subsidiary of NTT.

But due to NTT’s group wide reorganization, the company was dissolved on April 30, 2002, and its bridging business was absorbed into a newly established company called NTT Marketing Act Corporation, which is not only responsible for the bridging business but also for other various businesses such as NTT service support business (sales of NTT products and services), human resource, outsourcing, telemarketing, and so on. The majority of the employees are mainly seconded from NTT-West.

The former NTT Dynamic Telema was involved in other businesses such as marketing consulting, outsourcing, human resources, training services, and multimedia businesses such as ASP, content distribution, and “Chorusline.

Chorusline was initially launched in August 1996 by NTT Hokuriku Telmac, based in Kanazawa. According to a [Nihon Keizai Shimbun](#) article dated October 9, 1998, Chorusline’s business revenue reached ¥200 million for the fiscal year 1998 ending in March 1999. And since then, the bridging business has been steadily growing.

As for the data collaboration service, this was made possible through collaboration and development with NTT-West, former NTT Dynamic Telma, and [Lotus Japan](#). The commercial rollout was September 2000 after a two-month trial service beginning May 2000 involving 50 participating users.

In April 1999 NTT Hokuriku Telmac and Matsuyama-based NTT Pastel were merged with and absorbed into then Osaka-based NTT TelephoneAssist to form a single company called NTT Dynamic Telma whose headquarters were located in Osaka. The company has branches in the western part of Japan as the company is owned by NTT-West whose service area covers western Japan, but it also has a branch office right in the center of Tokyo as well.

Former NTT Dynamic Telma used to resell audio endpoint products from [Chescom International](#), [NEC Miyagi](#), and [Polycom](#). Probably this business has also been carried over to the successor, NTT Marketing Act.

2.3.11. NTT East Corp. / NTT West Corp.

[NTT East Corp.](#) and [NTT West Corp.](#) respectively in their limited service areas have provided audio bridging services since 1985, the year NTT was privatized. The service allows an audio conference with up to 30 participants. The cost is ¥90 per minute per site for the service usage in addition to phone charges. Based on advance reservation, NTT will

make dial-out calls to the participating endpoints.

There is an initial cost for a host subscriber who will be charged ¥2,700 per host subscription. The host subscription is only allowed in NTT's designated areas such as Tokyo, Osaka, Nagoya, Chiba, etc. But each call participant can be anywhere in Japan.

The two companies also recently launched an IP video service for NTT's ADSL (Flet's ADSL) and optic fiber (BFlet's) Internet users. It is called "Flet's Connect." But IP video connection is only allowed within each prefecture, so, for example, the users in Tokyo cannot have an IP videoconference with their counterparts in Osaka or Fukuoka, nor in overseas countries. This is because NTT East and West are only allowed by law to do their business within a prefecture area or local area.

As for video products, they sell "PhoenixMini Type-M (¥74,800)" and "Type-S (¥59,800)" videophones that are compliant with H.320, and the Moppet (¥98,000) videophone that is compliant both with H.320 and H.324M. With Moppet, you can communicate not only with H.320 videophone or videoconferencing systems, but also with recent 3G mobile phone such as DoCoMo's FOMA wireless videophones. PhoenixMini Type-M and Type-S came out in March 1999 and as for Moppet, it came out on November 30, 2001 with a nationwide sales target of 40,000 (20,000 each for NTT-East and -West) per year. According to a [Nikkan Kogyo Shimbun](#) article dated March, 30, 1999, NTT sold 19,000 units of the PhoenixMini, a predecessor to the PhoenixMini Type-M and Type-S, during the period of 19 months from September 1997 to March 1999.

In addition, in May 2001, they made an OEM agreement with Sony to sell Sony's PCS-1600 and PCS-6000 whose NTT names are PhoenixWIDEIII and Phoenix 3000HX respectively. They also dealt in the former PictureTel's Swiftsite, whose NTT name is PhoenixWIDEII-M128. But they do not have OEM products from Polycom.

2.3.12. NTT-IT Corporation

[NTT-IT](#), a subsidiary of NTT-West with a wide range of solutions for corporate networking or Internet/intranet, is offering an IP video bridging service called Meeting Plaza *Denmou Kaigi* (cyber-net conference) Service as an ASP service. It allows up to 32 endpoints to participate in a bridged conference, and its pricing starts at ¥30,000 for initial cost and ¥10,000 for monthly usage cost for 5 sites up to 5 hours. But you need to have your PCs and cameras with necessary devices and an Internet connection with a minimum speed of 28.8kbps before actually using the service.

NTT-IT together with NTT-West have been conducting an IP video bridging trial service since November 2001 only for users in Osaka, of Flet's ISDN, ADSL, BFlet's NTT's flat rate internet connection service. It is called, "Meeting Plaza for Flet's." The trial service started in November 2001 and is slated to end in June 2002.

NTT-IT also offers an e-learning collaboration software solution called "Learning Plaza." It allows users to have training with streaming video and interactive text chatting features.

2.3.13. NTT Phoenix Communications Network, Inc.

[NTT Phoenix Communications Network](#), known as NTT Phoenicom, was established in July 1997 to provide video bridging services in Japan. The company is a subsidiary of NTT East Corp. It has focused up to now on video rather than audio since the strategic reason for

establishing NTT Phoenicom was to promote the nationwide use of ISDN and video has been seen as the killer application to boost ISDN traffic.

NTT Phoenix has gained more than 1,900 subscribers as of the end of December 2001. And according to a recent report dated February 1, 2002 in Nikkei Sangyo Shimbun, NTT Phoenicom is now handling more than 3,000 video meetings per month, which means a 20% jump from 2001 especially affected by 9/11 tragedy as companies in Japan are now reducing the number of overseas trips.

As the company has its enlarged customer base, it has started other services such as audio bridging, streaming, IP video, event management, consulting services, and videoconferencing equipped room rental services to meet the wide range of customer demands. The company has its own rental rooms located in its facility and other places in Tokyo.

NTT Phoenicom now has 54 access points for 128kbps video, deployed throughout Japan. Subscribers can call their nearby access point to connect up to an MCU, whereas other providers usually have one access point only in Tokyo. NTT Phoenicom's subscribers can save long distance charges when connecting to the access points.

NTT Phoenicom is now seeking to expand its business through its partnership with V-Span and Proximity in October 2001 to meet demands from global customers.

2.3.14. Premiere Conferencing Japan

An automated audio bridging service was launched in March 2000 with the [Premiere Conferencing](#) division of [Xpedite](#) being responsible for the service. But from March 2002, the division spun out of Xpedite to become a subsidiary fully owned by Xpedite.

Premiere Conferencing offers "ReadyConference," an automated audio bridging service connecting up to 48 sites without prior reservation. But if you plan to have 49 or more, you need to contact an operator to set up the conference. According to Premiere, it is planning to allow users to make a reservation for bridging on Premiere's web site as well. The service cost is just ¥30 per minute per site. There is no monthly basic charge or conference setup fee.

Based on public announcement made to its customers, Premiere has implemented a facility expansion to address the growing demand for its service.

The company sells Polycom's Soundstation audio endpoint to customers through the Polycom's distributor, [Princeton Technologies](#).

2.3.15. WebEx Communications, Inc.

[WebEx](#) partnered with [NTT-ME](#) in October 2001 to introduce "TOCSR," a web-based collaboration service that standardizes on WebEx technology. The cost for setting up an account or "Microsite" starts from ¥198,000 with the running cost starting at ¥16,600 for 1-25 licensed users. And if you need audio communications, you can add "Quick Start Audio Conference service" which costs ¥5,000 per site per month for unlimited use.

WebEx also partnered with [Cybernet Systems Co., Ltd.](#) to launch "WebEx Meeting Center" tailored for Japanese users from December 2001. In its press release on December 12, 2001 WebEx mentions that the service is especially targeted for manufacturing

companies in Japan with the first year sales target of 1,000 ports. It seems that the cost for the service is basically the same as “TOCSR.”

2.3.16. WorldCom Conferencing Japan

[WorldCom](#) Conferencing is based in the heart of Tokyo’s business district called Marunouchi. As far as Japan business is concerned as I reported in the previous Japan report, WorldCom launched the Conferencing Division in October 1999 to address multinational corporate customers as the company thought that the time had ripened for the conferencing business in Japan.

WorldCom Conferencing’s bridging service portfolio goes across the board from all types of bridging to sales of audio and videoconferencing endpoint products from Polycom. The support staff is available both in Japanese and English.

WorldCom has been putting an emphasis on customers especially in financial sectors, who have an audio bridging need for daily international communications.

3. Overview of leading distributors or resellers in Japan

3.1. Daito Electron Co., Ltd.

[Daito Electron](#), established in 1957, is well known as a leading distributor in Japan for Polycom's products or solutions in the conferencing industry and has an advertisement banner always indicated in a Yahoo Japan web page under the videoconferencing category. However, the company's business ranges are wider than that and they deal with not only conferencing products, but also other electronics devices, machinery, and international trading business focusing on IT technologies and products.

Currently, Daito is also known as having aggressive sales forces to promote business for itself and for its own partners. We assume that Daito is the largest contributor to Polycom business in Japan currently among Polycom's other leading partners such as [Cannon Sales](#), [Princeton Technologies](#), [Hitachi High-Technologies](#), [Hitachi Cable](#), and [Otsuka Shokai](#) (formerly one of PictureTel's largest partners in Japan). Daito is well skilled in providing technical support and pro-sales customer care for its customers who purchase Polycom's products.

Daito is a public company whose stocks are traded at the second Section of the Tokyo and Osaka Stock Exchange, with yearly sales of ¥42.7 billion, with 386 employees. It has 16 sales offices in Japan and overseas sales offices in the USA, Korea, Taiwan, and Germany along with 6 subsidiaries in and out of Japan. The head office is located in Osaka, and headquarters in Tokyo.

3.2. Japan FA Systems Corporation

[Japan FA](#) was established in 1991, located in Yokohama, Kanagawa, and has developed and manufactured technologies surrounding visual communications since then. It is now also a distributor for RADVision, the former [Accord Video Telecommunications](#), [Tandberg](#), [Zydacron](#), and Video Communication Systems GmbH (Germany).

3.3. Macnica, Inc. / Macnica Networks Company

[Macnica](#) was established in 1975 by an engineer as a venture startup and now is a public company with ¥97.9 billion yearly revenue in 2000 and 575 employees as of March 2001.

Macnica's business domain lies in electronics and information communications and it is offering products and solutions for Internet and intranet or corporate networking.

The company has been very active and open in the sense that it has sought and partnered with various overseas companies to introduce their products or solutions into the Japanese market.

[Centra](#), an e-learning collaboration software vender in the US, is one of them. Centra and Macnica have been mutual partners since January 2000 and, since then, Macnica has been extensively involved in the localization of Centra's products.

In the past year, Macnica has held a couple of half-day afternoon seminars in which it introduced Centra's products and case studies in Japan. Centra's CEO attended both

seminars to give presentations to more than 150 attendees each. Centra is seemingly trying to open up its opportunities in Japanese business.

Centra's solution had been adopted, as of November 2001, in 30 companies in Japan including [Oracle Japan](#), [ITOCHU Corporation](#) (a trading company), [Nikko Cordial Securities Inc.](#) (a Securities firm), [Moshi Moshi Hotline Inc.](#) (a telemarketing firm), and [NEC University Ltd.](#) (a corporate training service provider).

To boost sales, Macnica has partnered with [NTT-IT](#), [Global Knowledge Network Japan, Ltd.](#) and [CTCLS Co. Ltd.](#)

Macnica has offices in Osaka, Utsunomia, and Nagoya in Japan, and overseas offices in the USA, Hong Kong, Singapore, and Taiwan.

3.4. NTT-ME Corporation

[NTT-ME](#), a wholly-owned subsidiary of [NTT-East](#) established on April 1, 1999 with a headcount of 18,000, offers various kinds of multimedia business related products, solutions and network services to meet enterprises' diversified needs. (Almost everything, I would say, because NTT-ME's president Mr. Shigeru Ikeda mentioned before that NTT-ME will be involved in any business that is feasible enough except "robbery and theft.") In addition to the multimedia business, NTT-ME offers network facility maintenance services for NTT's switched circuit network nationwide.

NTT-ME is very well known nationwide. NTT-ME has 12 subsidiary companies including [NTT-X](#) and [NTT-ME Consulting](#).

As for conferencing, NTT-ME's 9th Marketing Headquarters is responsible for the business and distributes products and solutions nationwide from [Polycom](#) (PictureTel, Accord), [VCON](#), [RADVision](#), [Compunetix](#), [Sony](#), [Ezenia!](#), [WebEx](#) and [Leadtek](#) (a Taiwanese videophone maker) with technical support services.

NTT-ME is taking diversified or multi-vender approaches in providing products and solutions to its customers in Japan, therefore, it is, in a way, open-minded in partnering with potential foreign vendors.

Its customer base is one of largest in Japan and the company works closely with NTT's corporate sales teams.

3.5. Onkyo Tokki, KK.

[Onkyo Tokki](#) was established in August 1979 with initial capital of ¥120 million, and is based in Tokyo with sales offices in Fukuoka and Osaka, and with an overseas office in the USA. The company has been extensively involved in the audio equipment business. Onkyo has 14 sales partnerships with companies in the UK, the USA, and Norway such as [Symetrix](#) (USA) and CADAC (UK).

Onkyo has been a partner of [ClearOne Communications Corporation](#) (formerly Gentner) since June 1999 and has sold Gentner audio and video conferencing endpoint products and peripherals.

And Norway's [TANDBERG](#) videoconferencing vender has been a partner as well since last year.

3.6. TOMEN Cyber-business Solutions, Inc.

[TOMEN Cyber-business](#) was established in July 1996 with 55 employees to provide Internet-related solutions and products for VDSL modem, HomaPNA (Home Phonline Networking Alliance), IP videoconference and so forth. TOMEN is a partner with [First Virtual Communications](#) in Japan.

In the area of IP video, TOMEN offers a video capture board and camera bundling CuSeeMe client software with the CuSeeMe Conference server or client software. TOMEN takes care of localization of CuSeeMe and products of FVC.

TOMEN has achieved its successful sales of CuSeeMe into the educational sector and pushes its sales strategy along with its sales partners, Yasukawa Information Systems, Co. Ltd. and Fuji Denki Sotetsu Co., Ltd.

TOMEN also has a Japanese web site for [CuSeeMeWorld](#) which offers a free video chat service.

3.7. VTV Japan, Inc.

[VTV Japan](#) was formed in 1995 with ¥60 million in capital and now raised to ¥80 million as a venture startup and a private company focusing on multi-vendor approaches in videoconferencing solutions. It is solely focused on video. Its headcount is around 10. However, in close cooperation with respective video vendors, it has provided solutions to more than 50 leading big names such as [AIG](#), [BASF Japan](#), [Eastman Kodak](#), [Accenture](#), [Ericsson Japan](#), [Unisys Japan](#), [Fuji Film](#), and local governments here in Japan. Since its inception, its vendor-neutral and multi-vendor sales approach has been admired by many customers in Japan and its business is steadily increasing year by year.

VTV Japan right now deals with products from [VTEL](#), [Polycom](#), [Sony](#), and it has recently partnered with [TANDBERG](#) as well. And it is known as the sole partner for VTEL in Japan.

VTV Japan provides not only installation services, rental videoconferencing rooms and rental video equipment, but also personalized services such as training, technical support (help desk), event management, and bridging services for its own customers.

VTV Japan has hosted a series of successful seminars in the past, putting together day-long or half-day seminars in Tokyo focusing on videoconferencing, e-learning, and H.323 trends, and gathering a successful number of attendees.

4. Conclusions

- a. As for the implementation of videoconferencing systems in organizations in Japan, about 20% are running on an IP network because of lingering concern about the reliability of IP communications such as QoS and security.
- b. One-quarter of companies in Japan have 1.5Mbps bandwidth for a dedicated Internet connection, which is probably not enough bandwidth for all data including video packets. More than 50% are still either at 64kbps or 128kbps.
- c. As broadband services such as ADSL/CATV/FTTH are widely deployed nationwide with a declining trend for ISDN, we are seeing some companies starting to launch IP video related services.
- d. Central and local governments are adopting IP networks as part of their IT projects and rolling out citizen services using IP video.
- e. Use of international video communications in schools is becoming popular as a way to promote cultural exchanges and understanding.
- f. Earnings calls are gradually getting attention mainly from globally operating companies in Japan and we are seeing the related businesses are growing.
- g. Popular “Sha-mail” type service, the advent and use of FOMA wireless videophone, and Windows XP along with the price drop in PC cameras, may have a favorable impact on conferencing as a whole as it is a fact that people are bombarded by and are getting used to visual communications.
- h. Japanese media are paying attention more to video conferencing than to audio and data.
- i. Revision in the Japanese corporate law is around the corner and it will promote the use of videoconferencing in Shareholders’ meetings and Board of Directors’ meetings.
- j. The number of people working in telework or satellite office environments is expected to reach 3 million by the end of fiscal year 2002 ending March 2003, which may promote the use of conferencing technologies.

Appendix I

Audio/Group / videophone/desktop/MCU endpoint vendors

| Vendors | Country Of Origin | Audio | Group (Codec) | Desktop | Video phone | MCU GW |
|---------------------|-------------------|----------|---------------|----------|-------------|----------|
| Advanced Solutions | Japan | | | X | | |
| Compunetix | USA | | | | | X |
| Ezenia! | USA | | | | | X |
| ClearOne | USA | X | X | | | |
| First Virtual Japan | USA | | | X | | X |
| Hitachi | Japan | | X | | X | X |
| K&M Enterprise | Japan | | | X | | |
| Laksmi-Do | Japan | | | X | | |
| Leadtek Research | Taiwan | | X | | X | |
| Matsushita Ind. | Japan | | X | | | |
| Mitsubishi Electric | Japan | | X | | X | |
| NEC Engineering | Japan | X | X | | | |
| NetCom | Japan | | | X | | |
| Miyagi NEC | Japan | X | | | | |
| NTT East/West | Japan | X | X | X | X | |
| OSAMU | Japan | | | X | | |
| Polycom | USA | X | X | X | | X |
| RADVision | Israel | | | | | X |
| Sharp | Japan | | | | X | |
| Sony | Japan | | X | | | |
| Tandberg | Norway | | X | | | |
| Universal Micro. | Taiwan | | | | X | |
| Uniform Industrial | Taiwan | | X | | | |
| VCON | Israel | | X | X | | |
| VTEL | USA | | X | | | |
| Voyant Tech. | USA | | | | | X |
| WOOKSUNG | Korea | | | | X | |

Appendix II

Leading Service Providers

| | Country | Bridging capability | | | | | Remark | |
|-----------------|---------|---------------------|-------|----|------|----|----------------|----------|
| | | AD | Video | | Data | PV | | ER |
| | | | BRI | IP | | | | |
| E-Associates | Japan | X | | | X | | Earnings calls | |
| Face To Face C. | Japan | | | | | X | X | |
| France Telecom | France | | | | | X | | |
| Doutche Telecom | Germany | | | | | X | | |
| GINGA NET | Japan | | X | | | | X | NOVA |
| JT/BT | UK | X | X | | | | | |
| KCOM | Japan | | X | | | X | X | |
| KDDIS | Japan | X | | | | | | |
| KDDI TeleServe | Japan | X | | | | | | |
| Marubeni Telec. | Japan | X | | | | | X | |
| NTT Com. | Japan | X | | | | | | |
| NTT-DT | Japan | X | | | X | | | |
| NTT East / West | Japan | X | | X | | | | |
| NTT-IT | Japan | | | X | | | | |
| NTT-ME | Japan | X | | | X | | | TOCSR |
| NTT Phoenix | Japan | X | X | X | X | X | X | |
| Premiere Conf. | USA | X | | | | | | |
| VTV Japan | Japan | | X | | | X | X | Video SI |
| WeBex | USA | X | | | X | | | |
| WireOne | USA | | | X | | | | |
| WorldCom | USA | X | X | X | X | | X | |

*AD..Audio, PV...Public Videoconference room service, *ER... Endpoint reselling & Rental

Appendix III

Leading Distributors/Resellers

| Distributors/resellers | Partners |
|------------------------|---|
| Daito Electron | Polycom |
| Japan FA Systems | Polycom(Accord) RADVision Tandberg Zydacron |
| Macnica | Centra |
| NTT-ME | Compunetix Ezenia! Leadtek Research Polycom(PictureTel, Accord) RADVision Sony Voyant Technologies WebEx |
| Onkyo Tokki | ClearOne Communications Tandberg |
| TOMEN Cyber-business | First Virtual Communications |
| VTV Japan | Polycom Sony Tandberg VTEL |