

Vol. 14, No. 9
December 1999

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DDI, IDO and KDD to merge in October 2000

DDI Corp., KDD Corp. and IDO Corp. announced that they would merge with each others on October 1, 2000, in order to compete with the giant NTT group. These three firms decided to get together because they considered, otherwise, they will not be able to survive in the forthcoming Megacompetition era: a number of foreign capitals are entering the Japanese market while M&As between Megacarriers are being concluded in the U.S. and European markets. Upon the merger, the second largest telecommunications company which will provide comprehensive telecom services from cellular, PHS, long-distance to international services will be born. According to them, the new firm that will be called DDI Corp. will have 3.26 trillion yen in revenues in fiscal 2000 (ending March 31, 2001) on a consolidated basis. Upon the merger, the Japanese telecommunications market which was opened up in 1985 will be reorganized into three big groups: the NTT Group, the Japan Telecom (JT) Group and the DDI-IDO-KDD Group.

However, since corporate cultures of DDI, a leading venture company, and KDD, the former international monopoly company, are said to be very different, they seem to be in need need of efforts to harmonize their cultures. In addition, since their business prac-

tics are overlapped in some areas (both DDI and KDD are handling both domestic and international business, for instance) they need to coordinate the business practices and slash out some excess labors.

According to the announcement on December 16, 1999, the new DDI Corp. is expecting to have 1.75 trillion yen in revenues (the parent firm) or 3.55 trillion yen in revenues (on a consolidated basis) in fiscal 2001 ending March 31, 2002. The consolidated revenues will be about one-third of that of the NTT Group and to be ranked within top 10 worldwide.

The new DDI will focus on IP and mobile technology, and will provide services integrating mobile communications and the Internet. Their first target will be the next-generation mobile services called IMT-2000.

The surviving firm will be DDI Corp. Yusai Okuyama, Chairman and President of DDI Corp., will assume the post of the new DDI Corp. president. Kazuo Inamori, the founder and the honorary chairman of Kyocera Corp. and Shoichiro Toyoda, the honorary chairman of Toyota Motor Corp. will become honorary chairmen of the new DDI Corp.

Kyocera will have 15.8% of the stake of the new DDI and Toyota Motor will have 10.3% of the stake. However, due to a third-party share allocation sched-

uled to be conducted before the merger, the gaps of investment rates between these two firms are scheduled to be narrowed down to 2%.

By establishing the new DDI, these three carriers will jointly provide the IMT-2000 service. The IMT-2000 service is believed to be the most promising mobile service. Unlike the current PDC based service, subscribers of the IMT-2000 service will be able to receive the same service at virtually every part of the world with the same terminal at a data transmission speed of up to 2Mbps. Even moving pictures will be able to send out or receive with the terminal.

New Common Carriers (NCCs) which do not have any subscriber local loop are considering the IMT-2000 to be one of the most powerful strategic tools to defeat the giant NTT Group.

While the contractors of NTT subscriber telephones have been shrinking to under 60 million, the number of cellular phone users has been increasing rapidly. As of the end of November 1999, the number of mobile phone users including cellular phones and PHS reached 53 million. Market analysts say that mobile users will exceed fixed line users by the end of fiscal 1999.

In the telecommunications industry, carriers have been shifting its business focus from conventional fixed lines to mobile services.

However, these three carriers have been lagging in their preparation for their 3G business compared with NTT Mobile Communications Network, Inc. (NTT DoCoMo) and Japan Telecom Co., Ltd. (which owns the J-Phone network.)

Both NTT DoCoMo and J-Phone Group declared that they would launch their 3G services with W-CDMA; DDI and IDO have been jointly providing cdmaOne services nationwide and are developing their 3G services. But DDI-IDO group has not decided whether they will employ either the Direct Spread system or the Multicarrier system. KDD has long been studying wireless services; however it is not involved in wireless business at this time.

The Ministry of Posts and Telecommunications (MPT) in July 1998 announced that it would grant a 3G license

PC Server Market Expanding

The PC server market has been expanding rapidly. Riding on a wave of an open system, high-end servers being used for fundamental systems of companies, while being used widely for information and data system.

Many small- to medium-sized enterprises (SMEs) purchase PC servers when they update their systems.

According to Gartner Group Japan K.K., a leading market research firm, shipment of PC servers in Japan for the first half of fiscal 1999 was 115,000 units, a 26.6% up from a year ago.

The Gartner Group expected that the demand for PC servers in fiscal 1999 ending March 2000 will be 230,000 units, a 20% increase from a year ago. Although the demands had been dropping for a couple of months before the year 2000 due to concerns about the Y2K problems, the demands are expected to go on the rebound from the beginning of 2000 among SOHOs in particular.

Since demands among SMEs for servers have been expanding, leading PC

server manufacturers such as NEC Corp., Fujitsu Ltd., Compaq and IBM Japan are putting an emphasis on lower-end servers. On the other hand, these firms are also planning to market high-end products.

32,000 units of Express 5800 Series, the main PC server product line of NEC, were sold during the first half of fiscal 1999, a 33% jump from a year ago. Due to such good sales, NEC occupied the top market share of 27.9% during the period. NEC is targeting a sales of 64,000 units in fiscal 1999.

Fujitsu, the second largest PC server manufacturer, also expanded its sales. 23,500 units of GP5000 Series, the main PC server product line of Fujitsu, were sold during the first half of fiscal 1999, a 50% rise from a year ago. Its market share was 18.1% for the first half of fiscal 1999. Fujitsu initially planned to sell 47,500 units in fiscal 1999. However, since its sales during the first half of the year was already up

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Vendors Rush to Enter ASP Services through Communications Is a Hurdle

By Yaeko Mitsumori

As the number of Internet users has been expanding, software vendors have been launching application service provider (ASP) services one after another.

Some leading software vendors such as Fujitsu Business Systems Ltd. (FBS), Just Planning Inc., Sumisho Computer Systems Corp. (SCS) have been already providing ASP services.

But many other vendors including Fujitsu Ltd., Hitachi, Ltd., CSK Corp.,

Intec Inc. and Toshiba Engineering Corp. declared that they will enter the market soon. Their targets are not only small- to medium-sized enterprises (SMEs), but also large companies.

ASP is a type of service that service providers provide packaged software such as Enterprise Resource Planning (ERP) to users with a small monthly charges which include server maintenance costs, operational costs and software usage fees. The service is benefi-

cial for users because users can use a variety of software with a small charge by sharing a server with other users. On the other hand, there are some weak-points: they cannot customize the software and the number of available software is strictly limited at the moment.

Still the new service is winning popularity among enterprises especially SMEs because the initial cost for introducing ASP is much smaller compared

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Cellular Phone to Decide the Business Results of Electronic Parts Manufacturers

Electronic parts manufacturers which are mainly producing parts for cellular phones have been expanding their business, while other electronics manufacturers mainly producing communications infrastructures parts have been losing revenues. Cellular parts manufacturer-related have been expanding their business due to a continuous expansion of cellular terminals sales, while infrastructure-related parts manufacturers failed to expand their business partly because both NTT and NCCs (new common carriers) have been reducing their investments.

In addition, appreciation of yen for the past year deteriorated revenues and profits of export-oriented companies. The value of the yen against the dollar was roughly increased by 20 yen from a year ago.

Taiyo Yuden Co., Ltd., the leading maker of electrolytic capacitors and ferrites, initially estimated the net profit for the fiscal 1999 ending March 2000 to be 6.5 billion yen; however, it recently revised its estimated net profit upwards to 10 billion yen. The firm explained that this was because demands for multilayer ceramic chip capacitors and multilayer chip coils have been expanding.

According to the firm, its revenues for the first half of fiscal 1999 was 68.5 billion yen, up 33.1% from a year ago and its recurring profits for the same period was 4.7 billion yen, up 30.5% from a year ago. To meet the swell in demands for these multilayer ceramic chip capacitors and multilayer chip coils, the firm decided to construct new factories in Malaysia and Korea at a total of 20 billion yen.

Mitsugu Kawada, President of Taiyo Yuden, said that the firm is targeting to win 30% of the world market for the multilayer ceramic chip capacitors when these two factories are completed. Under the firm's three-year plan ending at the end of March 2002, the firm is targeting 200 billion yen in revenues.

Kyocera Corp., an all-round ceramics maker and the world's largest manufacturer of IC ceramic packages, has been expanding its revenues and profits due

to expansion in its sales of communications devices, semiconductors and electronics devices. According to the firm, its revenues for the first half of fiscal 1999 was 385 billion yen, up 7.7% from a year ago and its recurring profits for the same period was 41.1 billion yen, up 21.6% from a year ago.

Kyocera is going to construct a new factory in Shanghai at a price of 10 billion yen. The new factory which is scheduled to be opened in 2000 will produce 2 billion units of capacitors and 200 million units of LSI packages. The firm will also construct a new factory in Kagoshima Prefecture in Japan, which will produce 1 billion units of capacitors a month.

In Korea, the firm established a joint venture with a local communications firm last year which produces cdmaOne cellular terminals. In the PHS business, Kyocera is exporting both PHS terminals and cell stations to China and Taiwan.

Murata Manufacturing Co., Ltd., the largest maker of ceramic capacitors, has expanded its revenues and profits due to increased demands for the multilayer ceramic chip capacitors. According to the firm, its revenues for the first half of fiscal 1999 was 209 billion yen, up 11.8% from a year ago and its recurring profits for the same period was 46 billion yen, up 42.4% from a year ago.

The firm explained that this was because demands for electronics devices for cellular phones, digital consumer electronics and PCs have been expand-

ing. Murata occupies 40% of the world market for the multilayer ceramic chip capacitors. In order to meet such a swell in demands, Murata is planning to construct a new factory for these devices in Okayama Prefecture at 20 billion yen. When the factory starts operating, the firm's production for multilayer ceramic chip capacitors will be increased by 10%.

Rohm Co., Ltd., the largest specialist maker of custom linear ICs, has also been expanding its business due to good sales of electronics devices, including custom ICs for cellular terminals. According to the firm, its revenues for the first half of fiscal 1999 was 177 billion yen, up 0.9% from a year ago and its recurring profits for the same period was 61.8 billion yen, up 7.2% from a year ago.

TDK Corp., one of the top electronics parts manufacturers and world's largest manufacturer of magnetic tapes and ferrites, has lost revenues and profits because data reading head (MR Head) which used to be the main product of the firm, have seen its demand falling. According to the firm, its revenues for the first half of fiscal 1999 was 329 billion yen, down 6.6% from a year ago and its recurring profits for the same period was 34 billion yen, down 26.6% from a year ago. TDK is going to place an emphasis on cellular phone business. By investing 10 billion yen, it will strengthen its production for the multilayer ceramic chip capacitors by 40%. When the plan is completed, the production will be increased to 10 billion units per month.

Sanken Electric Co., Ltd., a leading maker of power sources and semiconductors, has lost business because demands for batteries used in communications devices such as switches and relay stations has been dropping due to reduction in investment by both NTT and NCCs.

According to the firm, its revenues for the first half of fiscal 1999 was 55.9 billion yen, down 1.7% from a year ago and its recurring profits for the same period was 1.4 billion yen, down 16.9% from a year ago.

Aimed at promoting its efficiency in development, production and sales, the firm is going to reorganize its semiconductor division by merging divisions for switching batteries and semiconductor batteries into the original semiconductor section. In the battery business, Sanken will put an emphasis on UPS.

Meanwhile, Kyocera announced on December 23, 1999 that it will purchase the cellular terminal production division of Qualcomm. The purchase price has not been released; but it is said to be 1 billion dollars.

Upon the agreement, Kyocera will launch sales of cellular terminals in the U.S. market, gain the leadership in the CDMA technology originally developed by Qualcomm, and assume an advantageous position in the competition for the 3G business to be launched in the spring of 2001. Kyocera and Qualcomm are scheduled to conclude the contract in February 2000. Kyocera will purchase the manufacturing, design, development, sales and marketing divisions for cellular business of Qualcomm which is based on Silicon Valley. Once the contract is concluded, Kyocera International, a subsidiary of Kyocera, will operate these divisions.

Kyocera will place an emphasis on cellular sales business in North America upon acquisition. Under the agreement, Kyocera will be provided CDMA chips and system software for the technology for the next five years from Qualcomm. With the acquisition, Kyocera will almost double its capacity for cellular production to 15 million units per year.

The cdmaOne cellular phone systems based on the Qualcomm's technology are being used in around 40 countries and areas around the world.

For the next-generation cellular system, NTT DoCoMo and the J-Phone Group have declared they would launch their 3G services based on W-CDMA. In contrast, the new DDI Corp., in which Kyocera will be the largest shareholder, is expected to launch its 3G services with cdma2000, based on Qualcomm's CDMA technology.

Industry News

NEC & Hitachi Establish Joint Venture DRAM Company

NEC Corp. and Hitachi, Ltd. signed an agreement to form a joint venture DRAM company at the end of December 1999 to be called "NEC-Hitachi Memory, Inc." (NEC-Hitachi Memory). Operations are slated to begin from April 2000.

With its president from NEC and executive vice president from Hitachi, the company will have an initial paid-in capital of 500 million yen, that is planned to be increased to 2 billion yen at the end of March 2000 contributed equally by the two partners. NEC-Hitachi Memory will be headquartered in central Tokyo and have a development and trial production center located on the grounds of NEC's Sagami-hara plant in western Tokyo.

By April 2000, the new company will have approximately 200 employees and this number is expected to expand to between 600-700 people by April 2001.

The staff will come from both NEC and Hitachi.

The new company's first task will be to conduct joint development of NEC and Hitachi's leading-edge DRAM products. Development will start with the 256Mb and 512Mb DRAM generations based on 0.13-micron process technology to be ready as product in fiscal 2001 (year ending March 31, 2002). The new company will also develop its sales organization with the aim of integrating sales operations at the joint venture company by the end of 2000 under a joint brand encompassing existing NEC and Hitachi DRAM products as well as those developed by the new company.

NEC and Hitachi initially agreed to broad cooperation in their DRAM businesses and a tie-up in June 1999. The establishment of a new DRAM joint-venture company based on the signing of a contract between the two companies, is expected to be implemented quickly and form the basis for a new, strengthened presence in the world-wide DRAM market.

The new firm will bring together the

best technology from both NEC and Hitachi that will not only result in more technically advanced products, but also in more rapid development. Through the anticipated synergies between the companies, more rapid introduction of shrink versions and circuit innovations are expected to reduce chip area size resulting in greater product competitiveness. Moreover, with joint branding, DRAM products are also expected to achieve greater presence in the marketplace to ensure the firm takes the leading DRAM market share.

NEC Receives WDM and SDH Order for Guangdong

NEC Corp. announced that it has received an order for a wavelength division multiplexing (WDM) telecommunications system and synchronous digital hierarchy (SDH) fibre-optic transmission system (FOTS) from the Ministry of Telecommunications, Guangdong, China.

The 2.5-Gbps 2-Fiber-Ring SDH sys-

tem will cover a total of 2,000 km of provincial trunk network. This will be divided into two parts -- one part will be intra-city networks for Shaoguan and Shanwei; the other part will cover the southern part of Guangdong, incorporating the cities of Zhanjiang, Huizhou and Zhaoqing. For this southern route, 16 channel 2.5Gbps WDM technology is to be employed. The WDM system, with a total capacity of 40Gbps, will be capable of handling approximately 500,000 telephone lines. The WDM network will be connected to the Guangdong - Zhanjiang WDM network supplied by NEC last year and will form an important backbone network in the province.

WDM systems offer solutions for carriers faced with meeting the demand for increased capacity whilst dealing with limited fiber pair availability. It is designed to work with a variety of single mode fibre types enabling telecommunications carriers to maximize the use of their existing fiber networks.

Under China's ninth five-year plan

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Venture Capitalist

VCs Are Becoming More Independent and Shifting to IT & Early Stage

Japanese venture capitalists (VCs) have been shifting their investment target from conventional manufacturing firms to information technology (IT) companies. This is because the manufacturing industry which was traditionally the main target for Japanese VCs has been badly damaged by the prolonged recession, while the IT industry including so-called "net industry" has been expanding.

Also partly due to restructuring in the Japanese society, VCs became to be able to recollect their invested money not only by initial public offering (IPO) but also by M&A. They do not need to wait until their invested firms are successfully listed to a stock exchange market. By selling the business to a larger firm, they can recover their invested money.

The IT industry has been developing and changing rapidly. In order to invest into really promising venture business and get high returns, VCs should have much knowledge about the high technology, have capability to evaluate the marketability of the technology, and make a swift decision.

Most of the Japanese VCs are owned and run by financial institutions. In line with these financial institutions' strategies, these VCs have been traditionally avoiding investment into early-stage firms and tend to invest into middle-stage companies whose business has been stabilized.

According to a survey conducted by an economic paper, earlier this year, a half of the investment money of Japanese VCs was poured into companies which were established 20 years ago or earlier.

Reflecting Japan's sluggish economic status, the total investment money by VCs in fiscal 1998 had shrunken for the past two consecutive years and became 122 billion yen. The total capital gain of the surveyed 157 VCs was 28 billion yen, a 10% drop from a year ago.

While the total investment money has been shrinking, the investment into the IT industry has been expanding. Although many Japanese VCs are traditionally owned and run by the financial sector, independent VCs have been born one after another, and they are aggressively investing into IT business. Again according to the survey, independent VCs have expanded their work force by 21% from a year ago.

Jafco Co., Ltd. is Japan's largest VC. Jafco has invested into a total of 2,000 firms since it was founded in 1973 and 501 among them have been listed to a market worldwide. The investment into Japanese firms in fiscal 1998 was 95 billion yen, significantly decreasing from a year ago, partly because the middle-stage firms failed to achieve good business results due to the prolonged recession, and investment into the IT industry has been expanded. (Since most of the IT related companies are small, their total investment amount has shrunk when their investments have shifted to the IT industry.)

Although Jafco does not take a strategy to concentrate its investments on the

IT industry, its investment into IT industry has been "spontaneously" expanding. In fiscal 1998, the investment for IT-related firms occupied 50% of the total investments; and in the first half of fiscal 1999, it occupied 60%. Masaaki Tachikawa, General Manager of the Communications Team of Jafco said he is expecting that the percentage will go up further in the future.

Jafco has traditionally employed hands-off policies, but it started being involved in the management of the firms invested directly by, for instance, sending out a management staff to these firms. Tachikawa said that the VC business has been changing and becoming more competitive in Japan. But he believes that Jafco can compete with other VCs in Japan because it has accumulated knowledge about the Japanese market through its long experience, and its staff has high competency to evaluate the companies.

Global Venture Capital Inc. is a boutique-type VC. The firm is owned and run by only three professional people including Hirokazu Hasegawa, President and CEO of the firm. Unlike conventional Japanese VCs, Global Venture Capital is employing the hands-on strategy: one in three staff of the Global Venture Capital takes care of the invested firms from the beginning -- searching the targeting firm -- to the end -- IPO or M&A.

Global Venture will send out its staff to its invested firms as a management. He visits the invested firm everyday for the first several months, and once a week until the firm is grown and stabilized, and once a month until its IPO. He will also work out the business plan, present the business plan to the financial institutes, and arrange business alliance for sales and development in cooperation with the invested firm. Since the number of staff is limited to three, the VC will limit its invested firms up to around 30.

Hasegawa said he does not have any intention to expand the number of the staff because what makes Global Venture Capital differentiating from other VCs is that GV itself is a venture business, run by three professionals, and focuses on start-up firms.

Hasegawa stressed that what they are doing is "value added" rather than a simple "investment." "Investors purchase a firm at a cheaper price and sell out at a higher price. But we will increase the total value of the invested firms. Only a few people in Japan have skill for that," he said.

New Business Investment Co., Ltd. is a quasi-governmental VC. It was established in 1990 by the Industrial Struc-

ture Improvement Fund, Development Bank of Japan and 151 private companies following the Law on Temporary Measures to Facilitate Specific New Business.

In 1996 it gained a freehand: a new division was established within the firm which can pick up the invested firms by themselves.

Since the new division was established it has invested a total of 540 million yen into 24 venture businesses.

Although the VC is not employing the strategy putting an emphasis on IT business, most of the invested firms are IT related. Since the VC is quite small, only virtually five staff members are taking care of all of the invested 24 firms while looking for new invested firms, they employ the hands-off strategy and are not involved in management of the invested firms directly.

One of the remarkable features of the VC is many other VCs including Jafco are investing into the VC because the VC is a neutral, quasi-governmental VC; it is difficult for the VC to support the whole business of one venture firm; and the VC is limited its investing money under the law.

According to Tsuyoshi Shionoya, Deputy Director of the Investment Department of New Business Investment, the VC has been traditionally introduced their invested firms from the VC's investors (Development Bank of Japan and 151 private companies), but recently it finds new invested firms through many other channels including direct contact due to recent boom of new stock exchange markets such as "Mothers" (the Market for the High-growth and Emerging Stocks) and NASDAQ Japan.

Although each VC has its own history, mission, and strategy, all of them seem to share the same screening policy for selecting invested firms: they carefully examine the entrepreneur's personality and management skill and marketability of the technology.

However, they see recent entrepreneurs differently: Jafco's Tachikawa said that unlike U.S. entrepreneurs, Japanese entrepreneurs tend to stick to the presi-

dential post and never leave their presidential posts. However, Global Venture's Hasegawa said Japanese entrepreneurs are changing and most of them willingly let other managers manage their firms if they think they will be able to do their business in a better environment.

All of them welcome recent expansion of the number of stock exchange markets.

Tetsuhisa Oda, Japan Asia Investment Co., Ltd., a VC focusing on the Asian market, said that the recent openness of new stock exchange markets is advantageous for VCs.

"When the requirements for listing are relaxed, invested firms are encouraged to do IPO and the terms until IPO will be shortened. Then VC will invest for early-stage firm or even start-up business," he said. However, many predict that "Mothers," the new stock exchange market of the Tokyo Stock Exchange (TSE), will be put under the TSE's second class rather than recognized as a specialized market for IT. Hiroyasu Shirahashi, Head of Planning, Listing Policy Group of TSE said that the TSE would like to make the Mothers as a specialized market for IT that is equivalent to NASDAQ in the U.S.

In a recent development, more independent VCs are born and aggressively investing into IT business. They tend to employ the hands-on policy and are involved in their invested business directly, set the period until IPO shorter and consider not only IPO but also M&A as a way to recover their money.

As Jafco's Tachikawa mentioned, Japanese VCs are being required to change their strategy since the environment surrounding the Japanese VCs has been rapidly changing.

Nobuyuki Hata, Professor of Kokugakuin University, said VCs are entering a highly competitive era. Only VCs which have profound knowledge in the Japanese market, can expand the company values and can make a decision swiftly may be able to survive in the future.

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Ordinary Account 1117150,
The Daiichi Kangyo Bank, Ltd.,
Kanda-ekimae Branch, Tokyo, Japan

The Telecom Tribune was established in 1986 by Akira KADOKURA, Editor-in-Chief. Chairman of the public company is Shoichi KITAKURA.

Data/network system development, design by Jay Richards

Canada

Deregulation: A Continuing Process

An interview with Mr. Peter E. Vivian, Executive Director, Telecommunications,
Canadian Radio-television and Telecommunications Commission (CRTC)

In 1992, Canada launched its deregulation effort in telecommunications. Since then the government has successively opened up, its leased circuits, long-distance services and the international market. Even local market has been opened up and competition has got starting in access lines business. Especially in the international market, the Canadian government regulates neither tariffs, terms and conditions of services nor retail pricing, and rejected the U.S. governmental benchmarking international access charges requirement. Although Canada has huge remote areas unlike Japan, it is successfully providing both conventional telephony and data communications services to virtually everybody, even in remote areas, by employing its subsidiary system. At the moment, the government is promoting a couple of nationwide programs to increase the data communications speed to let citizens use the Internet services at a sufficient speed such as more than 54 kbps. TT interviewed Mr. Peter E. Vivian, Executive Director of Telecommunications with Canadian Radio-television and Telecommunications Commission (CRTC) who visited Japan to attend an international symposium organized by Keidanren and asked about Canadian deregulation policies and his impression on Japanese efforts at deregulation.

TT: I understand that Canada has been promoting deregulation on telecommunications. Would you kindly explain how have you opened up your market?

Vivian: First, dedicated leased lines were deregulated in the late 1980s. Then the long distance was deregulated in 1992. And in 1997 we introduced local competition. Legal hurdles were cleared in 1997 but only recently companies have started organized. So now we have new entrance. There are probably 5-7 up running business with sizable market share in local competition. We (also) deregulated the international services. In Canada, Teleglobe had a monopoly for international telecommunications. Due to a concession that Canada made under the WTO, Teleglobe's monopoly was removed, and basically we have deregulated and freed up market access at an international level now. The commission is a very right-handed regulatory regime for international carriers. The only thing international carriers have to do is to register with the commission and to provide yearly traffic statistics. There will be a regulatory fee but they will be modest, just a few hundred dollars. At the present time there are 100-120 international carriers registered with the commission.

TT: Canada rejected introduction of the benchmarking accounting rates that the U.S. government had urged. What is the reason and how do you deal with the issue?

Vivian: We have rejected the U.S. request to impose an international accounting rate -- benchmarking accounting rates. The United States was angry at us for doing that. The United States has imposed through the FCC benchmarks, primarily for second and third world countries where countries use calls originating with North America to the third world countries as a way of generating hard currencies. It very much adversely affects the balance of payment. So the United States is quite tough and said they will start imposing benchmarking on international accounting rates. While they had no problem in Canada because our borders are very open, they wanted Canada to support to establishment of the benchmarking internationally. But we chose to say "no." The United States was a little bit concerned that other countries would use Canada as a back door for entry into the United States to avoid the international benchmark. We have seen no evidence for that yet. That is another reason that we want to do at least some monitoring of the international carriers using Canada. So we can keep our American friends happy.

TT: Has your office been trying to be less active in your regulatory job?

Vivian: The general trend in Canada is for the regulator, CRTC, to back a way, to become less and less active in regulating tariffs, terms and conditions of service and retail pricing for international accounting. Because we are very convinced that market forces and competition are becoming sufficient to discipline the

market place. Certainly that has been in the case domestically in Canada. The long-distance rates have come down substantially because of competition. (But regarding) local rates, the question has not yet been answered, because local competition in Canada is just now starting to take hold. I think price reduction there will be less dramatic because in Canada local services are provided at less than the cost. As the regulator we have been trying to raise local service rates. What we call "rate rebalancing." So there will be some reduction as a result of competition in local services. But I don't think the reduction will be as dramatic as what happened on the long-distance side.

TT: I understand that there are still restrictions on foreign ownership of the telecommunications business.

Vivian: There is a limit of 25% for direct foreign ownership but if you organize yourself correctly that amount can be raised to 46% for foreign ownership. It is a statutory requirement. The commission is bound by what the statute says. My guess is that in the fullness of time under the WTO, those foreign ownership restraints will be relaxed. However, given the outcome in Seattle with the WTO, I don't think it is happening in a short term. There may be some relaxation of those foreign ownership rules on a bilateral basis between the United States and Canada. I think in the fullness of time, may be in five years, when the WTO next gets its act together that (issue) may be on the table.

TT: Internet user has been increasing rapidly. Some governments are considering regulating the content that flow over the Internet. What is your organization's position over the issue?

Vivian: We held a national hearing about a year ago, to try to define whether or not the regulatorship played any role in regulating the Internet. At the end of day, we said "no," there is no role for the Canadian regulator to look at regulating the Internet either in term of pricing or in terms of content. At the public consultation we had the most of aggressive views to the contrary -- that is, the views favored intervention by the regulator dealt on content side, pornography and violence, and on security and privacy those sorts of social issues as opposed to the pricing of Internet services or controlling network operations or anything like. And again, the commission came to the conclusion that there were other legal vehicles and other legal remedies already available under our criminal code and civil litigation to cover off those matters. So basically what the commission has done is hands off on the Internet completely.

TT: What do you think about deregulation effort by the Japanese government?

Vivian: I will say two things: one positive and one negative. At a recent meeting on deregulation at Keidanren, I was overwhelmed by the consensus that

seemed to take place there both among Japanese participants and foreign participants. So that the policy issues came up and problems we discussed seem to be very uniform in New Zealand, Australia and the United States. At the end of the day there was a summary put together, and everybody agreed as to what the major problems were, and how they were being dealt with. So I found that very positive.

TT: What is the negative side?

Vivian: My sense is that things move very slowly here. That there are entrenched rights in the hands of the monopolist as there were in Canada. It takes a long time to overcome that. Further, deregulation is not very sexy topic for the average person on the street. If you stop someone outside this building and asked: "What do you think about the deregulation of telecommunications?" the reply would be: "Is that going to cost me money?" It does not have a high public profile in any country. I suspect that the same is true here in Japan. In fact one of the things came out at the symposium is the requirement for mounting of educational effort as to what the benefits to consumers would be through greater deregulation. Consumers not only in the sense of individual consumers but also business consumers. Because with increased competition in telecommunications, rates paid by business will go down. So the input cost of the economy will decrease. I look at some of the sample costs for telecommunications in Japan. Compared to not only Canada but also the rest of the world, telecommunications costs here are very high. Yet Japan is a world leader in technology, there seems to be a disconnect there between the two knowledge base, the networking and the network software that has been developed in Japan. You would think that would be reflected in lowered costs.

TT: What do you want the Japanese government to do?

Vivian: My sense is that there is growing public and business support in Japan for deregulation. I am meeting with MPT this afternoon. I hope to get some better understanding as to where the ministry itself is going. Because of the nature of the industry and the structure here in Japan I think progress toward the deregulation will be slow as it was in Canada. We started in 1992 so it has been seven years. It has been even longer in the United States. Deregulation is not a one time event. It's a continuing process. And accomplished and continues basis increment by increment.

Technical Information Disclosure

Tokyo Telecommunication Network Co., Inc. (TTNet)

TTNet has disclosed interface specifications for its "Type 2 Multichannel Video Transmission Service (tentative name)," scheduled for launch in fiscal 2000. The service will enable users to simultaneously transmit/receive multiple video signals, such as of NTSC and DVB-ASI. This document describes technical requirements for four different user network interfaces.

For further information, contact:
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Qualcomm

Five Japanese Firms Using CDMA Technologies

C. Pomeroy, Asia Broadcasting

Qualcomm Inc., looking to build itself into a formidable presence in the cellular phone business around the world, has picked up some new allies in Asia. The California technology venture firm, which wants to succeed where Motorola failed by trying to provide its satellite-based Globalstar service worldwide, can thus expect some support for this endeavor as well by keeping in good stead with the new partners.

The five Japanese firms of Hitachi, Ltd., Toshiba Corp., Sanyo Electric Co., Ltd., Casio Computer Co., Ltd. and Sony Corp. have adopted San Diego-based Qualcomm's code division multiple access (CDMA)

technologies for high-speed packet communications. This system will be based upon the Qualcomm MSM3000 chipset and system software solution.

The Qualcomm CDMA digital wireless technology will enable data communications at a speed of 64 kbps. The agreement will allow the five Japanese manufacturers to lead the industry as to use of the chipset and system software solution for development of their handsets.

This is the first case of a solution being adopted in mass production quantities to support the IS-95B mobile protocol revision four, which allows for the mobile delivery of high-speed wireless Internet access. It also offers full interoperability specification for infrastruc-

ture requirements as well as complete training and technical support to ensure manufacturers of prompt addition of high-speed packet data without the need for new or additional hardware. Furthermore, there is a new chipset and system software being readied, MSM3100, that reduces the printed circuit board area by half while doubling the standby time.

Qualcomm will also make its technologies available to Fujitsu Ltd. and to makers such as Denso Corp. and Alps Electric Co., Ltd. in Japan. In addition, other Asian firms like Acer Peripherals, Inc., LG Information and Communications, Ltd. and Hyundai Electronics Industries Co., Ltd. have access to the U.S. technologies.

For voice service, cellular phones used by DDI Corp. and IDO Corp. are using the cdmaOne system. Hitachi in particular hopes to make full use of its Qualcomm connection to establish a 2.4 Mbps maximum speed digital data communications service among the many cdmaOne users. As of June 1999, such users were estimated to number about 350 million worldwide.

Carrier

NTT Communications Corp.

Korea Telecom

NTT Com, Korea Telecom Reach Basic Agreement on Tie-up

NTT Communications Corp. (NTT Com) and Korea Telecom (KT), South Korea's largest telecommunications carrier, announced that they have reached basic agreements and entered into a Memorandum of Understanding (MoU) regarding comprehensive business cooperation. The two firms will join hands in the area of global services for corporate users as well as in the area of rapidly growing Internet protocol (IP) service in Japan and South Korea. The agreement has been reached amid rapid change in the global telecommunications market.

Under the terms of their agreement, both partners will:

- 1) Cooperate on sales, operation and management of global managed services for multinational customers in Japan and South Korea. For this purpose, KT and NTT Com will develop specific scheme of partnership to provide Arcstar Global Services in Korean market.
- 2) Jointly handle Internet traffic between Japan and South Korea, which is expected to grow dramatically.
- 3) Operate an Internet backbone network connecting to the U.S.
- 4) Construct a joint portal service, and another portal that enables translation between both the Japanese and Korean languages, as well as develop related applications of the portal.
- 5) Cooperate on R&D for commercialization.

According to this MoU, the two companies will immediately start the joint provision of Arcstar Managed Frame Relay and Managed Bandwidth Services for corporate users in order to deal with the growing demand for data communications by multinational corporations. This move is a significant step forward that will ensure seamless communications between both countries.

Also, South Korea's largest Internet access service, KorNet, which is run by KT, and NTT Com's Arcstar IP Backbone were interconnected. This will change the flow of Internet traffic between Japan and South Korea, which had been flowing mainly via the U.S., thereby increasing customer convenience.

South Korea's fast-growing IP market makes it a significant player in the Asian telecommunications industry. Communications between Japan and South Korea is expanding rapidly as well, especially via the Internet. In this sense, the NTT Com-KT alliance has significant meaning for both companies' future strategies. The agreement gives each firm a solid partner in South Korea and Japan, both significant markets in Asia.

NTT East/NTT West

Application to MPT for Revision of Interconnection Charges

Nippon Telegraph and Telephone East Corp. (NTT East) and Nippon Telegraph and Telephone West Corp. (NTT West) applied to the Minister of Posts and Telecommunications for authorization to revise their Articles of Agreements Concerning Interconnection to Designated Telecommunications Facilities, including interconnection charges for fiscal 1999 (from April 1, 1999 to March 31, 2000).

1. Summary

The proposed revisions reflect the results of interconnection accounting based on unbundled functions

introduced in fiscal 1998.

In addition, interconnecting charges for connection leased circuits were computed on the basis of the cost of leased circuits as identified by interconnection accounting.

2. Timing of Revision

Charges will be immediately revised upon approval of the Minister of Posts and Telecommunications, and the revised Articles of Agreements shall be used in entering into agreements with other telecom carriers.

The revised charges shall be implemented retroactively as follows. Charges for telephone and ISDN shall be implemented retroactively from April 1, 1999. Charges for leased circuits shall be implemented retroactively from the date on which counterparties have made the switch to end-to-end charging.

3. Related Matters

With the application, NTT East and NTT West shall take steps to satisfy the requests which are described in the attached materials and the recommendations contained in the "Report of the Study Group on Interconnection Charge Calculation" released last summer. NTT East and NTT West have reported to the Minister of Posts and Telecommunications regarding the result of these steps.

Application to MPT for Revision of Articles of Agreements Concerning Interconnection to Designated Telecommunications Facilities Regarding Provision of Local-Switch Function Menu

NTT East and NTT West, following the announcement in July 1997 regarding the opening up of local-switch functions (advanced service connection), have announced their policies concerning the local-switch function menu and have been taking the required preparatory measures.

The development of these functions will soon be completed and, since they can be provided to other carriers from January 2000, NTT East/West have applied to the Minister of Posts and Telecommunications for authorization to revise the Articles of Agreement, concerning Interconnection to Designated Telecommunications Facilities.

1. Summary of Local-Switch Function Menu

NTT East/West will offer 41 types of functions in its local-switch function menu so that other carriers can freely combine functions selected from the function menu by controlling it from their service control point (SCP) via the signaling network, enabling them to provide customers with advanced services such as toll-free services and VPN.

2. Development of the Function Menu

In the past, in order for other carriers to offer new advanced services which require network modification in NTT East/West's local-switch software, it was necessary to make changes in the network for each service in accordance with their individual requirements. As a result, the introduction of new services was time-consuming.

This introduction of the local-switch function menu will allow NTT East/West and other carriers to levelly utilize the functions of the NTT East/West's local switches. Since this measure guarantees fairness in service competition conditions and allows other carriers to offer services without making network modifications, it will contribute to fairer competition. Greater competition in advanced services will benefit users by stimulating the development of a wide range of services and so forth.

3. Timing of Implementation

This system shall be immediately implemented upon approval of the Minister of Posts and Telecommunica-

tions.

NTT Communications Corp.

IBM Corp.

Tivoli Systems Inc.

NTT Communications, IBM Corp. and Tivoli Systems Reach Basic Agreement in E-Business Outsourcing

NTT Communications Corp. (NTT Com), IBM Corp., and U.S.-based Tivoli Systems Inc. announced that they have agreed to form a partnership in NTT Com's E-Business Outsourcing. NTT Com will commence services from April 2000.

Specifically, the service will provide clients with consulting, design, and implementation of managed computer networks and IT solutions, as well as providing a highly resilient outsourcing service for corporate intranet, extranet and Internet servers.

As the Internet is now establishing a new social and economic base worldwide, the unification of information networks and IT-related solutions will bring about new opportunities and create new businesses that cross traditional industrial boundaries.

Under this agreement, IBM will provide its scalable server operating technology with its e-business solutions, and related professional services. Tivoli Systems will provide enterprise management software solutions to comprehensively manage multiple vendors and cross platforms.

With this service and the OCN Aptiva Pack, NTT Com aims to provide a new business platform to a wide range of customers that will include individuals as well as corporations.

NTTPC Communications, Inc.

Start of Release of "Super High Speed Optical NW Solution"

NTTPC Communications, Inc. (referred to as NTTPC, Representative Director: Akira Nakatsugawa, Head Office: Miniato-City, Tokyo) starts from December 6 release of "super high speed optical NW solution," a network integration service for the next-generation carrier that achieves a large capacity and cost reduction of a backbone network for a carrier.

NTTPC has provided consistent system integration services from design to implementation/maintenance/operation for a high-speed network combining ATM and frame relay products for academic organizations and companies.

This time NTTPC offers "super high speed optical NW solution" that covers end/end with a superhigh-speed optical network using the WDM technology as the nucleus for the next-generation carrier that focuses on the data communications, which will become the mainstream in the future.

[Outline of the solution]

The core product of the network that is provided by this solution is a large capacity communications system for communications operators called WDM. NTTPC concluded an agency contract with CIENA Corp., which is a venture company that commercialized the WDM device for the first time in the world, and distributes the WDM device.

By connecting a superhigh-speed IP router and ATM core switch such as M40 of the Juniper Networks in the U.S. and Cisco12000 of the Cisco Systems in the U.S. using the WDM device as the nucleus of the network, NTTPC covers with an optical network not only a backbone network for a carrier but also edge applications. This enables efficient storage of existing LAN/WAN in a large capacity network.

Merger:*Continued from Page 1*

to three carriers (or three groups) due to limited available spectrum. NTT DoCoMo and the J-Phone Group are providing nationwide services (with second-generation technology), and are said to have secured each slot for the 3G business.

In order to get the remaining one slot, these three firms need to demonstrate a clear business concept for their 3G business early next fiscal year (FY2000).

The new DDI still has many issues to be cleared. First, it should reduce its

workforce. These three firms will have a total of 9,700 employees. Revenues per employee of the new DDI will be smaller than that of NTT Communications Corp. In order to cope with the NTT Group, the new DDI need to improve its efficiency or per capita revenues.

The new firm may need to tie-up with foreign capitals to survive in the very competitive data communications market. It is said that major foreign carriers such as Deutsche Telekom and France Telecom have expressed their interests in tie-up with the new firm.

What urged these three firms to decide the merger is changes in the structure of the telecommunications market. Since the mid-1990s Japanese telecommunications market has changed drastically. First, the Internet has taken off. Instead of conventional telecommunications carriers, new IP-based carriers are expanding or going to expand their business. Even conventional carriers have no choice but shifting their focus to the Internet. Some started constructing IP-based networks instead of conventional switch-based networks.

Also demands for telecommunications

have shifted from conventional fixed line services to mobile network services. Since cellular phone terminals started selling out to the customers in 1994, cellular users have expanded rapidly.

To produce good business achievement, telecom business managers need a swift decision making structure. To get the new firm to make a decision swiftly, these three firms chose the merger rather than tie-up or business alliance. How swiftly the new firm can make a decision under the leadership of President Okuyama seems to decide the fate of the new DDI.

Details of Merger between DDI, KDD and IDO

On December 16, DDI Corp. (DDI), KDD Corp. (KDD) and IDO Corp. (IDO) announced they have agreed as follows on the basic details for signing an agreement to merge on October 1, 2000.

Details of Merger

1. Purpose of merger

With the Japanese telecommunications market growing increasingly competitive and globalized as a result of deregulation and technological developments, DDI, KDD and IDO have been vigorously negotiating to build a secure position for themselves as a core telecommunications provider, and as a result have reached agreement as equals on the following basic points:

- 1) Becoming a comprehensive telecommunications carrier capable of offering seamless mobile, domestic and international telecom services will realize synergies enabling DDI, KDD and IDO to provide services more effectively and efficiently and thereby compete more effectively against the NTT group.
- 2) By enhancing their capital base, DDI, KDD and IDO will be able to accelerate moves to expand the scope of their businesses.
- 3) Through improving operating efficiency and competitiveness and expanding their scope of business, DDI, KDD and IDO will be able to offer world-beating services and aggressively expand marketing operations to capture the support of a wide customer base ranging from individuals to mega-companies both in Japan and abroad.
- 4) By concentrating management resources on one merged company and harmonizing the business objectives of personnel at all three firms in line with a unified business strategy, DDI, KDD and IDO aim to become a powerful business entity with the strength to compete against the dominant carriers in Japan and overseas.

In addition to becoming increasingly cutthroat, the market is also seeing a rapid shift from voice to data communications, and from fixed to mobile communications.

Being able to offer seamless service by developing both mobile and IP networks has thus grown to be of vital importance. Merging will enable DDI, KDD and IDO to respond to this changing environment, allowing them to pool their accumulated know-how, develop and expand an integrated backbone and provide a seamless nationwide mobile phone service, and become a leading player in developing next-generation mobile communications services.

Focusing as it will on mobile and IP network services and making more effective use of management resources, the global comprehensive telecommunications provider that the merger will create will greatly benefit the Japanese public and make a genuine contribution to the development of the economy as a whole.

2. Outline of merger

1) Planned merger timetable

Signing of merger memorandum: December 16, 1999

Board meeting to approve merger agreement: Late March 2000

Signing of merger agreement: April 1, 2000

General meeting of shareholders to approve merger agreement: Late June 2000

Date of merger: October 1, 2000

Registration of merger: Early October 2000

2) Surviving company: DDI Corp.

3) Merger share ratios

i) Proportional allocation of shares

One share in DDI (par value per share: 5,000 yen) will be issued per [92.1] shares in KDD (par value per share: 500 yen). One share in DDI (par value per share: 5,000 yen) will be issued per 2.9 shares in IDO (par value per share: 50,000 yen).

ii) Reasons for merger ratios

The merger ratio for DDI and KDD was calculated based on the average closing price on the TSE over the six months up to December 15, 1999 of shares issued

by each company. The ratio in the case of IDO was determined based on the results of calculations by a third-party agency, and finalized by agreement among the parties to the merger.

iii) Number of new shares issued through merger

Par value ordinary shares: 1,345,260.60 (par value per share: 5,000 yen) (Calculated on the basis of the capital stock of KDD and IDO as of December 15, 1999.)

4) Money delivered due to merger: Pending

3. Outline of parties to merger

(1) Trade name	DDI Corp.	KDD Corp.	IDO Corp.
(2) Line of business	Type I carrier	Type I carrier	Type I carrier
(3) Incorporation	June 1, 1984	March 24, 1953	March 9, 1987
(4) Representative	Yusai Okuyama	Tadashi Nishimoto	Satoshi Nakagawa
(5) Capital	72,634 million yen	40,502 million yen	68,740 million yen
(6) Capital stock (par value)	2,274,442 shares (5,000 yen)	76,224,823 shares (500 yen)	1,374,804 shares (50,000 yen)
(7) Shareholders' equity	318,281 million yen	371,258 million yen	19,865 million yen
(8) Total assets	810,895 million yen	924,733 million yen	457,995 million yen
(9) Accounting period	March 31	March 31	March 31
(10) Employees	2,990	5,792	979
(11) Main shareholders and shareholdings	Kyocera Corp.: 25.16% The Sumitomo Trust & Banking Co., Ltd.: 4.44% IBJ Trust and Banking Co., Ltd.: 4.16% The Chase Manhattan Bank, N.A., London: 3.33%	Ministry of Posts Telecommunications Mutual Aid Association: 9.26% Toyota Motor Corp.: 8.42% Nippon Telegraph and Telephone Corp.: .42% Nippon Life Insurance Co.: 4.86%	Toyota Motor Corp.: 62.84% Tokyo Electric Power Co., Ltd.: 11.78% Chubu Electric Power Co., Ltd.: 7.57% KDD Corp.: 2.40%

Note: Data correct as of March 31, 1999.

Financial results over past three years

	DDI (surviving company)			KDD (merged company)			IDO (merged company)		
	FY1996	FY1997	FY1998	FY1996	FY1997	FY1998	FY1996	FY1997	FY1998
Accounting period	FY1996	FY1997	FY1998	FY1996	FY1997	FY1998	FY1996	FY1997	FY1998
Sales (mil. yen)	557,839	535,882	605,510	322,458	316,413	313,160	267,440	338,825	410,710
Ordinary profit (mil. yen)	67,756	39,503	33,648	20,807	16,761	9,425	-5,889	-38,553	26,938
Net income (mil. yen)	37,783	23,740	16,867	10,165	8,451	7,269	-5,919	-38,583	7,509
Net income per share (yen)	17,376.07	10,876.41	7,416.01	158.16	131.50	106.50	-12,918.15	-81,949.68	5,461.93
Dividend per share (yen)	1,790.00	1,790.00	1,790.00	50.00	50.00	50.00	-	-	-
Shareholders' equity per share (yen)	113,939.39	134,341.24	139,938.22	5,493.98	5,573.70	4,870.57	11,158.14	8,987.77	14,449.70

4. Status after merger

- 1) Trade name: DDI Corp.
- 2) Logomark: KDDI
- 3) Line of business: Type I carrier
- 4) Principal office: 8 Ichiban-cho, Chiyoda-City, Tokyo
- 5) Representative: Yusai Okuyama (President)
- 6) Capital: Pending
- 7) Total assets: 2.1936 trillion yen (combined total assets of each company as of March 31, 1999)
- 8) Accounting period: March 31
- 9) Projected non-consolidated business results after merger (first two years)

i) Projected post-merger non-consolidated results obtained by simply adding up figures for each company.

	FY2000	FY2001
Sales	1,160 bn yen	1,750 bn yen
Operating profit	50 bn yen	100 bn yen
Ordinary profit	40 bn yen	90 bn yen
Net income	30 bn yen	60 bn yen

ii) Projected post-merger non-consolidated results for the year ending March 2001 do not include first-half projections for KDD and IDO.

10) Post-merger consolidated sales projections (first two years)

iii) Post-merger consolidated sales figures obtained by simply combining projections for each company.

	FY2000	FY2001
Sales	2,690 bil. yen	3,550 bil. yen

iv) Post-merger consolidated sales projections for the year ending March 2001 do not include first-half sales KDD and IDO. Their inclusion would increase sales to 3,260 billion yen.

5. Allocation of new shares to third party

DDI shall allocate to and Toyota Motor Corp. shall receive new shares prior to the merger. Specific details of the third-party share allocation shall be determined at a later date by separate agreement.

ASP:*Continued from Page 1*

with the cost when they themselves develop the system, keep servers and operate the system.

"From now on ASP will become a main business in the era of the Internet. We will put an emphasis on the business," said Koji Nishigaki, President of NEC Corp.

In fact, ASP-like services have been provided for a long time. For instance, some companies have assigned an outside company to calculate employees' salary while some other firms that own and run a shop on a virtual mall have assigned an outside firm to construct and operate their webpage.

As the number of Internet users has increased and PCs and web browsers are more commonly used, companies now can use a variety of software at a lower cost on a more flexible contract.

Already some businesses such as Kitano-Kazoku, a pub chain with outlets nationwide, Tomen Real Estate, a subsidiary of Tomen Corp., and many care houses for the elderly have successfully introduced ASP.

Vendors said ASP is beneficial for customers because by sharing servers, customers can use a variety of software at a lower price and can change or cease their services anytime.

One hurdle for ASP is the slow communications speed and high communications charges in Japan.

Shun Suzuki, Vice President of Service Business Promotion Headquarters of FBS said that customers carefully examine the benefits by introducing the ASP system comparing the necessary costs. "Although our services are as cheap as 35,000 yen per month, they still need to pay comparatively expensive communications charges. It might become a hurdle for spreading out the ASP services in Japan," he said.

FBS has been providing "Web Of-

ice," a groupware for business administration since July 1997. The Web Office is consisting of Bulletin Board System, electronic virtual conference, data library and customer controllers. Mail services, business mailer, electronic telephone directory, documentation pool, schedulers, browser mail are available as an option.

When they have PCs and LAN, users need only monthly fee of 35,000 yen (up to 50 IDs) and can receive all of the basic services. No customizing services are available. The network construction fee of 300,000 yen is charged initially.

As of the end of 1999, 140 customers are using the Web Office. FBS is planning to get 200 users by the end of March 2000, and 1,000 users by the end of March 2002. The firm also has been providing WebShop, a platform for a virtual shop, since July 1999 and Web Marketer, a web marketing tool, since September 1999. WebShop has been provided for 10 firms with 100,000 yen initial cost plus 30,000 yen up monthly "merchandise maintenance fee."

Web Marketer, a joint business with Welcome Japan and Digital Advertising Consortium, is being provided for 30 customers. Shun Suzuki, Vice President of Service Business Promotion Headquarters of FBS, said that the firm's ASP business is still tiny but the firm believes it will grow rapidly. Although many other firms are going to enter the market, Suzuki said FBS has advantage because the firm is a System Integration firm and has a longer experience in the ASP business.

Just Planning Inc. has been providing its ASP services for restaurant chains since July 1999. Its ASP system "Makasete-net" is being provided for 120 stores of four restaurant chains including Kitano-Kazoku. The Makasete-net is a total business solution tool for restaurant business taking care of sales data, order data, employees working

shift data and menu data.

If they have a POS system (or an equivalent PC system), users can receive the service at 150,000 - 500,000 yen for the head office and 19,000 yen per restaurant. The head office and the Just Planning's computer center are linked with each others with NTT Com's Open Computer Network (OCN), and each restaurant and the computer center are linked with each others with public switched telephone networks.

Masanobu Mochiki, Managing Director of Just Planning Inc., said that the Makasete-net is targeting restaurant chains with some 50 outlets, and there are 1,300 such chains in the Tokyo metropolitan area only. Just Planning is targeting to provide the service to 200 restaurants by March 2000, and 500 restaurants by March 2001.

Mochiki said the firm is going to make an effort to "mature" the current system for the moment, and then it will apply the system for other industries rather than the restaurant industry.

SCS has developed an ASP system specialized for care houses for the elderly known as "tokuyo."

SCS is targeting the care houses because a new social insurance system specialized for taking care of the elderly is scheduled to be introduced in April 2000.

Upon the introduction of the new insurance, these care houses will need to manage their facilities more systematically and send the bill for local governments for requesting the payment in return for taking care of the elderly.

SCS developed the system called "Hiiragi" in cooperation with EOS, an organization established by 40 care houses.

As of the end of 1999, 90 care houses around the nation ordered the "Hiiragi" system. Since the new insurance system will be launched in April 2000, they are using the system on a trial basis.

With the system, these houses can

manage their customers (the elderly) and bed vacancy, work out a care plan, produce the care plan and a contract to be exchanged with their customers, record the cares which have been provided for each customer, and produce a bill to be submitted to a local government. When they have PCs and LAN, such a care house can get the services at 80,000 yen plus 30,000 yen per PC. In average, each facility will be charged 200,000-300,000 yen per month. When the facility is not an investor of EOS, it is charged 400,000 yen membership fee separately.

The user facility and the computer center of SCS will be linked each other with frame relay for keeping high security. Tsutomu Nishiyama, General Manager of the Systems Management Division of SCS, said that by introducing "Hiiragi" with 200,000 - 300,000 yen per month, these facilities will be able to largely reduce their duties especially duties for producing a bill for the government. (Under the current system, these facilities do not need to request the payment for the government.) "We believe that larger 800 such facilities among 4,000 care houses in Japan will receive much benefit by introducing our system," he said.

SCS is targeting to provide the services for 200 facilities by March 2000, and 500 facilities by March 2002.

Kenichi Kumada, Director of Systems Management Division of SCS, said that one benefits of ASP is it will provide more choices in software solutions for customers.

"Frequent software users may had better purchase packaged software, but these software tend to be revised so often and become out of date so quickly. On the other hand, anybody with a PC and browser can receive ASP service at a lower charge and they can stop subscribing the services anytime," he said.

PC Server:*Continued from Page 1*

by 50%, the firm is considering revising its sales target figure for the year. Fujitsu's sales was up because its indirect sales through dealers have grown significantly. The sales through dealers was up 80% from a year ago. Other PC manufacturers such as Compaq and IBM Japan are also beginning to emphasize the PC server business. These firms won market shares of 12.3% and 11.2%, respectively, during the first half of fiscal 1999.

Other firms such as Hitachi, Ltd., Mitsubishi Electric Corp. and Toshiba Corp. are also strengthening their production lines for PC servers. However, their strategies and tactics differ.

NEC is placing an emphasis on indirect sales.

Hitachi, Ltd., meanwhile, is going to emphasize high-end servers and make a present of some of their products to its customers.

Toshiba Corp. will gear up sales of the MAGNIA PC server series. The firm is targeting a sales of 15,000 units in fiscal 1999, up 50% from a year ago.

The PC server market has been

expanding rapidly for the past several years.

Mainframe and office computers had traditionally been used for comparatively large server systems; however, as PCs have been widely used in offices, UNIX and PC servers have replaced them. Today, UNIX servers are more widely used; however, PC servers are being used as well. Due to such a shift in the demand, functions of PC servers have changed. In the past, PC servers are mainly used for specific purpose as a printer server or a file server. As more PCs started being used for server systems, these servers are required to have high reliability, availability and serviceability. PC server manufacturers are putting an emphasis on these three functions.

Usage for PC servers have been expanding. PC servers are now being used for the Internet or CTI.

To meet these new usage, PC server manufacturers have developed their products. One example is clustering technology. Unlike information and data services that PC servers have been mainly used for, the server system should not go down on any occasion. To avoid the crash of the system, clustering technology is a vital

solution.

As part of its effort to encourage SMEs to use more information technology, the government last year introduced tax incentives for PC users. Due to the measure, businesses which purchase PCs and related machines can deduct the purchasing cost from their tax up to 1 million yen. In line with the governmental policy, these manufacturing firms are offering lower-end PC servers at a price of less than 1 million yen.

Regardless of such governmental policies or measures, IT introduction of SMEs and individuals seem to have advanced further. As long as the present trend continues, the PC server market will find demands for its high-end products, specialized products (machines for a specific job), as well as lower-end products.

Competition among vendors has become more intense since the beginning of this year. Some manufacturers such as NEC have made an effort to hold on to their market share by offering value-added machines, while some other manufacturers are offering lower price products to expand their market share. Competition is now taking place on both ends: in prices and in functions.

Sun Microsystems in Contract with Japanese Solutions Firm

Sun Microsystems has concluded a deal with Access Co., Ltd., a Japanese embedded solutions company, for use of Java and its technology compatibility kit (TCK). This deal is seen enabling Access to use Java for NTT Mobile Communications Network, Inc. (DoCoMo)'s iMode system, whose deployment the Tokyo-based firm is supporting.

The contract applies to modules, known as JV-Lite2 to be manufactured by the Japanese firm for use in personal digital assistants (PDAs), digital television sets (DTVs) and other IT terminals. However, as the NetFront browser from Access is embedded in three of the top four iMode cellular phones on the market, the deal with Sun is being eyed closely by the Japanese telecommunications industry.

In addition, there is a NetFront for DTV, which is the abovementioned browser that can also be used as a browser for the new broadcast satellite service starting up later this year. This DTV-use browser meets the requirements set forth by the Association of Radio Industries and Businesses (ARIB) for the Broadcasting Markup Language system to be used upon looking at the digital data broadcast information.

Furthermore, since these modules are to be fully compatible with Java, Sun was also given the push to approve the embedded solutions firm as a Java-compatible VM vendor. According to sources, this will further stimulate the cellular phone as well as the network appliances market in Japan.

Statistics

Records of Telecom Equipment (As of June 1999)

Production

Type	Jun. '99		Compared with Jun. '98 (%)
	¥1 Mil.	Sets	
Telecom Equipment	281,268		-1.2
Terminal Equip.	154,346		3.7
Wire Telecommunications Equip.	37,771		-22.6
Telephones Sets	6,631	813,569	-35.6
Standard Type	532	55,338	-18.7
Functional Type	534	170,221	-45.3
Wireless Phone	5,099	584,356	-32.1
Others	466	3,654	-59.8
Telephone Application Equip.	13,786		10.0
Key Telephone Systems	5,833	265,834	-18.6
Small Capacity	311	19,992	-24.9
Medium/Large Capacity	5,522	245,842	-18.2
Telephone Auxiliary Equip.	213	53,673	-2.7
Interphones	3,809	373,053	3.0
Others	1,131		-22.0
Telegraph & Picture Transmission Equip.	17,354		-33.1
Facsimile	16,324	349,286	-34.2
Super High-Speed Facsimile	236	2,085	13.5
High-Speed Facsimile	15,515	344,811	-34.5
Other Facsimiles	573	2,390	-39.8
Others	1,030		-4.4
Mobile Terminal Equip.	116,575	4,625,917	16.5
Land	114,968	4,591,663	18.3
•Automobile	64	2,262	-95.8
•Portable	99,398	3,888,386	17.9
•Pager	548	65,775	-69.9
•MCA	108	1,671	-42.9
•Public PHS Terminal	11,338	432,710	121.1
•Others	3,512	200,859	-17.9
Maritime and Airplane Personal Radios (900 MHz)	1,607	34,254	-44.1
Network-Related Equip.	123,857		-5.8
Wire Network-Related Equip.	101,659		-6.8
Switching Equip.	46,987		-0.4
Electronic Switches	33,187		-3.9
For Telephone Offices	25,656		-0.1
For PBX	7,531		-14.8
Other Switching Equip.	13,800		9.2
Carrier Equip.	54,672	9,843	-11.7
Code Transmission Equip.	39,946		-6.2
MODEMs	4,064	12,753	-35.8
Others	10,662		-18.1
Mobile-Related Network Equip.	19,438	21,821	-13.0
Fixed Station Communications Equip.	11,676	4,140	-19.9
Terrestrial	10,460	3,847	-10.3
Satellite	1,216	293	-58.4
Base Stations	7,762	17,681	0.1
Wire Telecommunications Parts	3,065		-28.8
Relays (1,000 units)	2,909	42,227	-28.5
Other Components	156		-34.7

Remarks: 1) Data are based on the Statistics of Actual Production by the Ministry of International Trade and Industry (MITI).
2) Radio Communications excludes the citizen band transceivers and the amateur telecom equipment.

Source: Communications Industry Association of Japan

Export

Type	Jun. '99		Compared with Jun. '98 (%)
	¥1 Mil.	Sets	
Telecom Equipment	49,986		-10.8
Wire Telecommunications Equip.	43,691		-11.5
Telephones	1,805	235	-54.4
Cordless Telephones	1,100	133	-59.1
Other Types	705	102	-44.5
Telephone Application Equip.	456	45	-70.3
Key Telephone Systems	141	4	-63.6
Automatic Answering Telephone Sets	113	2	-16.4
Intercoms	153	36	15.3
Others	48	3	-94.5
Telegraph and Picture Transmission Equip.	6,249	160	-40.1
Facsimile Equip.	6,249	160	-40.1
Teleprinters			
Others			
Switching Equip.	2,623	18	-11.2
Carrier Equip.	4,541	30	72.3
Components	28,017		0.5
Radio Communications Equip.	6,295	280	-4.9
Transmitter and Transmission/Receiving Equip.	5,473	136	-2.5
For Long/Medium/Short Waves	826	5	22.9
For Ultra Short Waves	1,752	79	-3.5
For Other Waves	2,896	51	-7.3
Receivers	821	144	-18.5

Import

Type	Jun. '99		Compared with Jun. '98 (%)
	¥1 Mil.	Sets	
Telecom Equipment	32,687		-19.3
Wire Telecommunications Equip.	29,592		-17.1
Telephones	1,483	251	-40.0
Cordless Telephones	528	75	-57.2
Other Types Telephone Sets	955	177	-22.8
Telephone Application Equip.	2,331	54	-34.8
Automatic Answering Telephone Sets	32	5	-59.1
Others	2,299	49	412.2
Telegraph and Picture Transmission Equip.	2,405	141	-9.4
Facsimile	2,136	122	-17.7
Teleprinter			
Others	269	18	360.7
Switching Equip.	8,402	17	29.2
Carrier Equip.	4,863	267	30.5
Components	10,108		-30.0
For Wire Telecom Only	8,583		-37.4
Parts for Common Use in Wired/Radio Communications Equip.	1,525		106.9
Radio Communications Equip.	3,095	102	-35.7
Transmitter and Transmission Receiving Equip.	3,023	95	-20.8
Transmitting Equip.	204	14	74.7
Transmitting and Receiving Equip.	2,736	69	-20.8
For Aviation	71	1	31.9
For Mobile Telephone	821	45	-31.2
For Long/Medium/Short Waves	21	8	-13.9
For Ultra Short Waves	63	4	-72.0
For Other Waves	1,844	25	-16.4
Receivers	72	8	-92.8

Remarks: 1) Data are based on the Statistics of Custom Clearance by the Ministry of Finance.
2) Radio Communications excludes the citizen band transceivers and Cordless microphones.
3) There are cases in which the total value will not equal the components because the figures have been rounded one decimal place. Also, the comparative ratios are calculated in ¥1,000 units.

Source: Communications Industry Association of Japan

Current Electric & Electronic Machinery Statistics (As of June 1999)

Products	Unit	Production			Sales			Stock		
		May '99	Jun. '99	Jun. '99/ Jun. '98 (%)	May '99	Jun. '99	Jun. '99/ Jun. '98 (%)	May '99	Jun. '99	Jun. '99/ Jun. '98 (%)
Video Tape Recorder	Sets	599,928	662,059	81.6	1,108,320	1,179,202	91.7	1,257,161	1,351,346	126.8
Video Disk Player	Sets	4,832	4,839	40.4	7,137	7,942	49.8	20,374	18,941	59.1
Video Camera	Sets	827,755	1,026,778	110.8	822,043	927,514	109.3	476,935	579,328	93.9
Car Navigation System	Sets	139,378	237,040	134.2	107,829	183,857	125.2	82,286	114,297	102.0
Digital Audio Disk Player	Sets	1,477,068	1,755,029	104.0	1,237,163	1,528,184	93.8	1,756,522	1,988,029	140.9
Active Liquid Crystal Device	1,000 units	4,082	4,297	188.6	3,079	3,713	220.7	1,261	1,028	102.2
Passive Liquid Crystal Device	1,000 units	37,458	39,558	112.2	34,401	36,850	113.1	16,963	17,292	75.6
Photoelectric Converter	1,000 units	877,643	941,932	112.8	953,228	1,046,218	126.4	368,342	361,959	86.4
Bipolar Semiconductor IC	Mil. yen	5,856	8,322	123.5	5,359	5,998	129.1	-	-	-
MOS Semiconductor IC (logical element)	Mil. yen	134,422	147,235	105.6	119,540	131,852	112.5	-	-	-
MOS Semiconductor IC (memory element)	Mil. yen	65,041	66,703	103.2	63,562	66,649	112.6	-	-	-
Hybrid IC	Mil. yen	21,842	24,711	102.3	19,897	22,665	108.9	-	-	-
General Purpose Computer	Mil. yen	10,788	17,564	61.6	-	-	-	-	-	-
Mid-range Computer	Mil. yen	17,903	24,681	93.7	-	-	-	-	-	-
Personal Computer	Mil. yen	712,767	994,958	124.7	-	-	-	-	-	-
Electrical measuring instrument (Except for semiconductors and IC measuring instruments)	Mil. yen	10,768	14,790	97.2	-	-	-	-	-	-
Semiconductor and IC Measuring Instrument	Mil. yen	11,069	17,677	126.2	-	-	-	-	-	-
Industry-use Measurement Control Unit	Mil. yen	11,092	14,074	80.5	-	-	-	-	-	-

Source: Machinery Statistics and Research Office, MITI

Cable Supply & Demand Classified by Type (As of June 1999)

Type of Cables	Orders Received			Shipment		
	Jun. '99	Jun. '99/ May '99 (%)	Jun. '99/ Jun. '98 (%)	Jun. '99	Jun. '99/ May '99 (%)	Jun. '99/ Jun. '98 (%)
Open Wire (OW)	8,598	111.0	104.4	8,417	118.6	89.8
Winding Wire	15,081	99.5	100.0	16,408	112.2	98.0
Cable for Machinery	5,153	107.2	97.2	5,182	109.6	95.5
Communications Cable	3,443	120.0	83.8	2,912	73.9	77.4
Power Cable	25,000	128.7	104.1	23,350	110.4	99.5
Covered Wire	14,497	114.6	92.4	14,866	114.4	93.2
Cable for Transportation	4,579	123.4	102.8	4,620	127.2	104.0
Total	76,351 (85,585)	115.1 (113.9)	99.3 (93.2)	75,755 (84,548)	111.1 (111.4)	95.7 (90.4)
Aluminum Power Cable	5,269 (3,880)	110.1 (152.7)	158.8 (135.9)	4,290 (2,425)	114.9 (111.5)	60.8 (50.5)
Optical Cable				890,304 (23,392)	136.4 (129.7)	166.4 (129.7)

Remarks: 1) Figures of optical cable show "km Core."

2) Figures in parenthesis represent the amount in yen.

Source: The Japanese Electric Wire and Cable Makers' Association

Cable Supply & Demand Classified by Major Consumption Fields (As of June 1999)

Fields	Orders Received				Shipment			
	Jun. '99 (Actual)	Jun. '99/ May '99 (%)	Jun. '99/ Jun. '98 (%)	Jul. '99 (Estimated)	Jun. '99 (Actual)	Jun. '99/ May '99 (%)	Jun. '99/ Jun. '98 (%)	Jul. '99 (Estimated)
Telecommunications	2,149	108.6	74.5	2,800	1,800	59.0	67.3	2,900
Electric Power	8,860 (3,840)	106.8 (115.0)	95.9 (169.9)	7,600 (2,200)	9,363 (2,786)	92.7 (109.9)	94.0 (44.9)	7,500 (2,400)
Electric Machinery	18,144 (306)	98.8 (94.2)	94.7 (152.2)	18,100	19,661 (309)	112.4 (121.2)	94.9 (156.1)	19,300
Automobile	6,335	123.4	103.5	6,400	6,340	128.7	105.0	6,400
Construction/Cable Shops	28,421 (27)	120.8 (142.1)	99.3 (84.4)	29,900	28,360 (30)	118.3 (100.0)	99.2 (71.4)	29,700
Others	6,048 (89)	106.0 (92.7)	84.2 (39.4)	5,500 (500)	6,381 (130)	118.4 (175.7)	91.4 (95.6)	5,700 (500)
Domestic Demand Total	69,957 (4,262)	111.1 (112.8)	95.6 (156.7)	70,300 (2,700)	71,905 (3,255)	110.7 (112.5)	95.9 (49.5)	71,500 (2,900)
Export	6,394 (1,007)	190.0 (100.1)	173.1 (168.4)	5,200 (500)	3,850 (1,035)	118.7 (122.9)	91.5 (215.2)	3,400 (1,100)
Total	76,351 (5,269)	115.1 (110.1)	99.3 (158.8)	75,500 (3,200)	75,755 (4,290)	111.1 (114.9)	95.7 (60.8)	74,900 (4,000)
Core Cable Sales	32,847 (125)	123.2 (137.4)	110.7 (87.4)	26,400 (100)	30,174 (115)	105.8 (234.7)	96.7 (48.3)	31,800 (100)

Remarks: 1) Figures of optical cable show "km Core."

2) Figures in parenthesis represent the amount in yen.

Source: The Japanese Electric Wire and Cable Makers' Association

IT Industry:

Continued from Page 2

(started 1996), the country is improving its telecommunications infrastructure — especially the inter-provincial backbone network. The number of Internet users in China is expanding dramatically (a five-fold increase per year) and China is moving toward the multimedia era, so further expansion of the provincial networks will be required. The WDM system presents the best solution to meet such needs. Demand for data and multimedia applications is particularly strong in Guangdong. One example of this growth in demand is NEC's Multimedia-On-Demand system, which is to be installed in Shantou. A large-capacity network infrastructure is essential to support such requirements.

Toshiba Dai Nippon Printing (DNP) Agreed to Develop and Manufacture Photomasks for Semiconductors

Toshiba Corp. and Dai Nippon Printing Co., Ltd. (DNP) announced an agreement for an alliance in the development and manufacture of photomasks for semiconductors. Under its terms, the partners will promote broad cooperation that will allow Toshiba to enhance the efficiency of its semiconductor operations and support DNP in expanding its photomask business.

Photomasks are an essential element in the manufacture of semiconductors. They hold microscopic images of electronic circuits on high precision quartz

plates, and transfer them to semiconductor wafers as integrated-circuit patterns. The agreement brings together well-balanced partners.

DNP has achieved the production capabilities and cost-competitiveness required to take the leading share of the world market for photomasks, while Toshiba has state-of-the-art technology that it currently reserves for in-house use.

The agreement between the companies embraces three key points:

- Toshiba and DNP will together establish a manufacturing company, to which Toshiba will transfer its photomask manufacturing operations. During the first three year of the agreement, Toshiba will receive all photomasks manufactured by the new company, via DNP.
- In March 2000, the partners will start joint development of the technologies necessary to manufacture next-generation photomasks for semiconductors fabricated to the 0.13-micron design rule and beyond.
- Toshiba will license to DNP its know-how in 0.15 micron-class photomasks. DNP will use this to reinforce its photomask production capabilities and to enhance its overall photomask operations.

Seven-Eleven Japan Establishes Joint Venture to Undertake Full-Scale Development of the Electronic Commerce Market

Seven-Eleven Japan Co., Ltd., NEC

Corp., Nomura Research Institute, Ltd. (NRI), Sony Corp., Sony Marketing (Japan) Inc., Mitsui & Co., Ltd., Japan Travel Bureau, Inc. (JTB) and KINOTROPE, INC. have agreed to establish a joint venture to undertake a full-scale development of the electronic commerce (EC) market. The joint venture will be established in February 2000.

The new company, 7dream.com, will be capitalized at 5 billion yen. Capital participation will be Seven-Eleven 51%, NEC 13%, NRI 13%, Sony 6.5%, Sony Marketing 6.5%, Mitsui & Co. 6%, JTB 2%, and KINOTROPE 2%.

To undertake full-scale development of the EC market, 7dream.com will offer progressive services by bringing online one of the largest Internet web sites in Japan in June 2000, to be followed by the placement of multimedia terminals in Seven-Eleven stores starting in October 2000.

Moreover, the company will not limit itself to