Scramble for a Share Of the Telecom Trade

By Kazuhisa Maeno

April 1, 1985 was a milestone in the history of Japan's telecommunications. That was the day the principle of competition was introduced to the industry, and it has never been the same since. Not only is the decades-long monopoly of the mammoth Nippon Telegraph and Telephone Public Corporation gone forever, but literally hundreds of new, hard-driving entrepreneurs have leaped in to fight for their share of one of the world's most lucrative telecommunications markets. The short-term impact has been lower rates and improved services. Over the long term, though, Japanese consumers will find themselves with more communications options than ever before, from the trusty old household telephone to exotic computer networks, "smart" pagers and portable phones small enough to pop into a handbag.

New framework

Coming on the heels of the dismemberment of AT&T in the United States and British Telecom, it's easy to place Japan's privatization of NTT and the liberalization of existing telecommunications laws in the mainstream of deregulation around the world. But while the competitive principle may be the same, the actual framework of deregulation in Japan is unique. Any look at the nation's new telecommunications order requires a quick review of the new legal framework that was snapped into place at the start of fiscal 1985.

The two-track liberalization policy that was mandated by the Diet divides the telecommunications business into two categories, Type 1 and Type 2. Type 1 businesses own and operate their own telecommunications circuits, while Type 2 businesses lease circuits from Type 1 operators, using them to provide computer communications and other value-added services. Type 2 telecommunications businesses, in turn, are classified into two subgroups, special Type 2 and general Type 2. The former group of businesses provides nationwide value-added services, frequently referred to in Japan as "value-added networks" or VAN, while general Type 2 firms run only small-scale networks without the national spread of their bigger brothers. So far Japan is the only country in the world using these classifications, although both Canada and West Germany are reportedly leaning toward the Japanese formula as they draw up their own deregulation plans.

Type 1 businesses, called "new common carriers," have the biggest challenge of all in the new telecommunications market: They are the companies that are

Top executives of Daini-Denden Inc. mark the start of Type 2 telephone lines.

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going up against the privatized version of NTT, still a goliath in its new corporate clothes, in competition for the nationwide telephone business. So far five companies are in the running, three using nationwide networks of ground-based optical fiber and microwave systems, and two staking their future on telecommunications satellites.

The best-known of the three ground-based systems is Daini-Denden Inc. (DDI), a consortium that includes such high-tech prodigies as Kyocera and Secom, and which was the first to get wide publicity in its bid to defeat NTT. Its very name conjures up a striking image, meaning literally "The Second NTT." However, DDI has plenty of competition from other newcomers as well. Also aiming for the national phone market are Japan Telecom Co., affiliated with the Japan Railways Group, itself the privatized version of the former Japanese National Railways (JNR). The third is Teleway Japan Corp. backed by the Japan Highway Public Corporation. All three are already offering services between Tokyo and Osaka, DDI using microwave links and Japan Telecom running optical fiber cables along the Tokaido Shinkansen railway line. Teleway Japan has installed similar cables along the Tomei Expressway between the two cities.

Huge investment

All three groups began operating last summer, providing exclusive telephone circuits between the head offices and branches of major companies in Tokyo and Osaka and other distinctive services. None has yet shown a profit—hardly surprising given the huge initial investment it takes to build a national telecommunications network. Nonetheless, initial business results are encouraging. In its first year, DDI ran an operating deficit of ¥3,998 million. But its sales nonetheless reached ¥126 million, nearly double the initial estimate of ¥70 million. Japan Telecom reported a deficit of ¥3,440 million on sales of ¥341 million, also well above initial estimates of ¥200 million. Teleway Japan generated sales of ¥186 million, a far cry from original estimates of ¥420 million. However, it had the smallest operating deficit of ¥3,418 million.

Already making their presence felt in the business market, the three companies now must go on to exploit that market further while expanding into the vast market for telephone services in the home. All three launched long-distance services for householders between Tokyo and Osaka on September 4. As their systems now stand, calls are carried over their own proprietary circuits between the two cities, but must be routed through short-distance NTT telephone lines to reach the final users. Points of interface (POI) with the NTT system have been set up at the ends of their respective lines and in major cities along the route.

Cheaper calls

Calls using the lines of these new common carriers are on average some 25% cheaper than conventional NTT calls. A three-minute call between Tokyo and Osaka, for example, now costs ¥400 via NTT and only ¥300 via one of the NCC networks. Whether this difference will be enough to enable the newcomers to prevail against NTT has yet to be seen. Presently, NTT's revenue from Tokyo-Osaka services is estimated to reach a mammoth ¥300 billion annually, but the giant company, Japan's biggest, is also doing all it can to improve services, lower rates and keep the whole market for itself.

The remaining Type 1 companies are not yet in operation, but their plans are the most technologically ambitious of all, for both Japan Communications Satellite Co. and Space Communications Corp. plan to bounce their signals off satellites. Japan Communications Satellite is owned jointly by C. Itoh & Co., Mitsui & Co. and Hughes Communications of the United States, and is expected to open for business next February. Space Communications, a joint venture by Mitsubishi Corp., Mitsubishi Electric Corp. and Ford Motor Co. is not targeting telephone services at all, but hopes to distribute television programing to cable television (CATV) companies across the country via a U.S.-built satellite. The service should start next April.

Not every Type 1 communications firm has its eyes on lucrative long-distance phone calls. Some, such as Telenet, owned by Tokyo Electric Power Co., are targeting smaller markets. Telenet plans to launch operations in November in the Kanto region around Tokyo and in Yamanashi and Shizuoka Prefectures—the areas encompassed by Tokyo Electric's power grid. Telenet is using optical cables which are immune to the magnetic field created by high-voltage electric currents and can therefore be installed beneath Tokyo Electric's power lines. The telephone lines are fed into subscribers' homes alongside electrical circuits.

Deregulation also promises to spur growth in the field of mobile communications such as cellular telephones for automobiles. Car telephones were introduced in 1979 and have proved very popular, with sales expanding by more than 200% a year. NTT has not been able to keep up with demand.

Deregulation has brought two new companies into this promising market. One is Kansai Cellular Telephone Co., set up by DDI and Motorola of the United States. The other is Nippon Idou Tsushin Corp., founded by Teleway Japan and Toyota Motor Corp. Following a dispute over service areas, the Ministry of Posts and Telecommunications (MPT) mediated a compromise agreement this spring, giving Nippon Idou Tsushin central and eastern Japan and Kansai Cellular Telephone western Japan. Both firms are expected to start their services in the year beginning next April.

Not to be outdone, NTT began in August 1986 to market a portable telephone even smaller than car phones, the first of its kind in the world. Weighing only 750 grams compared to the 2 kilograms of an ordinary car phone, the new handheld device is small enough to carry in a handbag.

The growth of the mobile phone market demonstrates how quickly competition can improve the quality of service. The same is true of pocket bells, which hit the market in 1968 when NTT was still a public corporation, and now number more than 2 million. These paging devices used to emit only sounds, while in the United States they display the phone number of the caller and a brief message. Now, bells similar to the U.S. version using a liquid crystal display device are finally available in Japan. In all, more than 10 pocket bell companies are in business throughout the country.

More pocket bells

The representative company in the Tokyo region is Nihon Telephone, established by Japan Telecom, Secom and Motorola. In Osaka, Kansai Electric Power Co. and Sumitomo Bank set up Kansai Tele-Message. In Kumamoto City, Kyushu Network System was founded by Nikoniko-do, a supermarket chain, and the Press Kumanichi.

According to an estimate by the MPT, by 2000 there will be 4.5 million car phones and 6 million pocket bells in Japan. The liberalization of telecommunications has given strong impetus to the expansion of this market.

Competition in the telecom industry has made items such as car telephones and pocket bells more easily accessible to Japanese consumers.

Competition is also growing in international telecommunications, currently the monopoly of Kokusai Denshin Denwa Co. (KDD). A number of private companies are banding together to set up new international telephone services known collectively as "second KDDs."

International Telecom Japan Inc., for instance, is a consortium of Japanese firms that includes Mitsui, Mitsubishi and Matsushita Electric Industrial among its members. International Telecom Japan plans to use *Intelsat* satellite transponders and a third transpacific cable now planned by KDD. When telephone services start in 1989, rates are expected to be 20–30% lower than those currently charged by KDD.

International Digital Communications Inc., another consortium that includes C. Itoh and Toyota Motor, is hoping to lay an undersea cable of its own in cooperation with Cable & Wireless of Britain. The MPT originally objected to there being two competitors to KDD on the grounds that overcompetition would hurt all three companies. Ministry efforts to arrange a merger between the two newcomers failed, however, and both are expected to get their business licenses by next March, the end of the current fiscal year.

Deregulation has opened the way for the rapid development of Type 2 telecommunications, or data communications through computer networks. It is possible to perform essentially the same tasks through computer linkups that telecommunications do through switching circuits. Computer data communications were prohibited under NTT's monopoly, so the advent of these computer networks, or VANs, in Japan dates back only to April 1, 1985. Data communications differ fundamentally from telephone calls and other basic communications in the way data is processed by computers. In other words, value is added to the data transmitted, hence the term "value-added network."

Mail box data

If data communications is not available, communication between incompatible computers made by different companies is impossible. The VAN formula, however, interfaces between these computers by matching different "protocols," or communications procedures, in an operation called "protocol conversion."

VAN can perform various services. There can be media conversion, as in automated banking systems which respond to telephone inquiries on bank balances by facsimile, or code conversion, in which a set of codes attached to a body of data is replaced with other codes. Synchronized communications supply data simultaneously to large numbers of subscribers. "Mail boxes" enable a customer to accumulate data over time and examine it later at his convenience.

Companies providing these services are classified into special Type 2 businesses and general Type 2 businesses, with the special type referring to vendors of nationwide VAN services. General Type 2 businesses serve relatively smaller areas, maintaining VANs among affiliated companies, for instance.

The VAN business has grown rapidly since the privatization of NTT. Ten special Type 2 firms are in business, including Ace Net, an affiliate of Intec with its head office in Toyama Prefecture, and Kyodo VAN, which links up local computing centers across the country.

As for general type firms, there are reportedly some 400 systems commercially available throughout the country, including "mail box" services. All these small-scale VANs have been reported to the MPT. But there are also many that have gone unreported.

One of these is owned by a translation firm in Ogikubo, Tokyo. Approximately 50 translators across the country are linked by a network of personal computers called the "translation VAN." This system allows translators to work at home and send their finished translations to Ogikubo via computer, but the firm does not consider itself to be performing Type 2 telecommunications and has never applied to the ministry for permission. The plethora of such networks across the country is intensifying competition in this fast-growing field. ●