

**Strategies of Telecom Common Carriers for Expanding Globalization:
A Comparative Study of the USA, the European Union, and Japan:
The Japanese Case¹**

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Hajime Oniki

Professor, Osaka-Gakuin University

Visiting Professor and Professor Emeritus, Osaka University

Japan

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A. Introduction and summary

This article summarizes the development of Japan's international telecommunication after the 1985 Reform. It consists of two parts. Part I gives a summary of the history of Japan's international telecommunication from 1985 to 1997, emphasizing the impacts of the 1985 Reform and the new trend emerging after the issue of divesting NTT was settled. Part II analyzes the recent trend in Japan's international telecommunication; it attempts to explain the absence of the competitive power with NCCs (new common carriers) in domestic markets and that with NTT and KDD in global markets.

In the first section (Section B) of Part I, a brief description of the history of the international telecommunication of Japan before the 1985 Reform is given. Section C explains impacts of the 1985 Reform. The main impact was a sequence of remarkable price reductions for several years following the Reform. Section D describes the increase in the pressure toward introducing more competition into the international as well as the domestic markets of Japanese telecommunication. The main focus of the policies and the business activities at this stage was the removal of boundaries between domestic, international, and other telecommunications markets, and the introduction of mutual entries between them. This took place in the debate of divesting NTT, but actually it covered issues beyond NTT's divestiture such as the need for deregulation and the introduction of further competition.

All of these were concluded in 1997, as explained in Section E. The revision of the three telecommunications laws, the Telecommunications Business Law, the NTT Law, and the KDD Law was approved by the Diet in June 1997. As a result, NTT will be divided in 1999 into one long-distance and two regional companies under a holding company. The long-distance NTT will be allowed to supply international telecommunications services, and, in return, KDD will be allowed to get into the domestic market. In addition, deregulations are expected to materialize within a couple of years. At the present time, alliances between Japanese telecommunications providers are taking place

one after another as a consequence of the recent legislative and regulatory actions.

Part II is devoted to discussions on the promotion of competition and possible *globalization* trend in the international telecommunications market of Japan. Sections F and G, the first two sections of Part II, points out the possibility of NTT's dominance in the mobile and the long-distance markets and the absence of globalization activities with NTT and KDD. The following section (Section H) attempts to explain these observations as a consequence of the fact that Japan does not possess comparative advantage on producing telecommunications services, in fact, on information-related activities. This section presents a hypothesis that the overall characteristic of Japanese organizations, to be called *deep coordination* in this paper, is a cause of the inactiveness with Japanese telecommunications providers, in fact, with Japanese organizations providing *network-type* products or services. Two evidences of this hypothesis are included in this section: one on NTT and the other on MPT.

The paper concludes, in Section I, with a forecast of Japan's international telecommunication in the near future and a brief discussion how the Japanese telecommunications industry could overcome the difficulties having been pointed out in this paper.

Part I. HISTORY OF JAPAN'S INTERNATIONAL TELECOMMUNICATION: 1985-1997

B. Brief history before the 1985 reform

International telecommunications business in Japan started in April 1953, when KDD (Kokusai Denshin-Denwa Corporation, meaning the International Telegraph and Telephone Corporation) was created from the NTT Public Corporation (the old NTT) by separating its international division. The old NTT itself was established from the Japanese Ministry of Telecommunications in August 1952. The Postwar Peace Treaty between the Allies and Japan was

signed in San Francisco in April of the year, and it is believed that the creation of the old NTT as well as that of KDD was promoted by GHQ (General Headquarters) of the Allied Occupation Force.²

Formally, KDD was established as a private corporation; however, because of the limitations and controls imposed by the KDD Law (1952), it has been called a "Special Company."³ In effect, KDD is a half-private and half-public corporation. Further, it was a monopoly supplier of international telephone services in Japan until the 1985 liberalization of the international telecommunications market.

The economic level of Japan in 1953 was lower than that of developing countries in Asia today. The Japanese economy, however, grew rapidly in the 1960s and the 1970s to reach the level of advanced countries. A driving force of its growth was foreign trade; in fact, promotion of the export of manufactured goods was the prime objective of the Japanese economy, since Japan, due to the limited domestic supply of natural resources, must import foods, energy, and raw materials from abroad. The demand for international telecommunications services, for this reason, increased steadily as the Japanese economy grew, and KDD had no difficulty to expand its business.

During the 25-year period from 1953 to 1978, the annual message-units that KDD handled increased by 70 times.⁴ KDD's business during this period may be characterized by the following terms: steady increase in the demand for international telecommunications services, continuous introduction of new technology from abroad, high supply price of services, good maintenance of facilities and high quality of services, optimistic forecast for business development, and high salary with large benefits to employees. In short, high quality and high cost characterize the international telecommunications services of Japan during this period.

² In fact, GHQ divided in 1949 the traditional PTT of Japan (Teishin-sho) into the Ministry of Posts (Yusei-sho) and the Ministry of Telecommunications (Denki-Tsushin-sho). Privatization of NTT, which took place 35 years later, would have been more difficult, if the Japanese PTT had been preserved in one piece.

³ The privatized NTT today is also a Special Company under the NTT Law.

⁴ According to a KDD statistics, the number of message-units per year in 1953 was 190 thousand, whereas in 1978 it was 13490 thousand. This means an annual growth rate of 18.6%.

The advancement of information and telecommunications technology was accelerated in the middle of the 1970s by the emergence of LSI and other technologies such as digital switching and multiplexed transmission. The cost of telecommunications services, particularly the cost of long-distance transmission, started to decrease rapidly. International telecommunication was the sector which received the greatest impact from this technological progress. Since international telecommunications services were supplied monopolistically by KDD and there was no competition, this cost reduction led not to price reduction but to increase the profits of KDD. This generated the pressure for new entries from outside the market; the demand for liberalization of the industry was strengthened gradually. As we know, the worldwide reforms of the telecommunications industry in the middle of the 1980s and thereafter started from this trend.

In Japan, the reform of the telecommunications industry took place in 1985.⁵ In April of the year, competition was introduced by the privatization of NTT and the permission for NCCs (new common carriers) to operate in the domestic long-distance and the international markets. New carriers were also allowed to operate regionally, with mobile telephones or with satellites. Local telephone markets, however, were left under NTT's monopoly. International telecommunications market, in fact, became competitive in October 1989, when two NCCs, ITJ (International Telecom Japan) and IDC (International Digital Communication), were allowed to start to operate.

The 1985 Telecommunications Business Law of Japan recognizes two categories of carriers: type I and type II. They are distinguished by their facilities, not by their services. Type I carriers are those operating with physical transmission facilities; type II carriers are those without transmission facilities. In effect, a type I carrier can offer every service a type II carrier can, but not vice versa. Type I carriers are regulated by the MPT (Ministry of Posts and Telecommunications) in entry-exit, service provisions, pricing, and other aspects. At the present time, foreign owners are allowed to

⁵ Today, MPT calls it "the First Telecommunications Reform of Japan." The reform taking place since the middle of

obtain the shares of a type I carrier, except those of NTT and KDD, of which foreign ownership is restricted to 20%.⁶ International type I carriers are KDD, ITJ, and IDC. NTT and KDD are established by the NTT Law and the KDD Law, respectively; they are “Special Companies” and are regulated by MPT more heavily than other type I carriers. The Telecommunications Business Law defines two subcategories of type II carriers: general type II carriers and special type II carriers.⁷

A major feature of the 1985 Reform of the Japanese telecommunications industry, after the monopoly by NTT and KDD was abolished, was that the industry was effectively divided into five business areas: (1) domestic local, (2) domestic long-distance, (3) international, (4) mobile, and (5) satellite. Although the 1985 Telecommunications Business Law does not explicitly state that telecommunications business be divided into areas, MPT imposed regulations according to this five-area scheme. Thus, when a provider applies to MPT for a new entry into (or an exit from) telecommunications business, one of the five areas was supposed to be designated in the application. It was thus understood that no single provider, except NTT, could operate in more than one area. For a few years after the 1985 Reform, this restriction of entry across market borders was taken for granted by MPT, by providers, and by the general public, as it was a part of the traditional way of doing business and other activities in Japan.⁸

As a consequence of this five-area scheme, the international telecommunications market of Japan was isolated from other areas; no new entry into the market was conceived of until the early 1990's. Rather, competition between KDD and the two NCCs was expected to lead to service

the 1990s is called “the Second Telecommunications Reform.”

⁶ This was a major issue between Japan and U.S. in relation to the recent GATS-WTO negotiations on the liberalization of basic telecommunications services, which was concluded in February 1997.

⁷ Special type II carriers are those operating internationally or those operating with a large number of circuits. There is a slight difference in regulation of entry into the industry between general type II carriers and special type II carriers. General type II carriers need only to report of their entry to MPT; special type II carriers need to register themselves with MPT.

⁸ Later, however, in the 1990s, when the possibility of new entries between the local, the long-distance, and the cable business was considered in U.S., the five-area scheme, particularly the fact that the scheme was imposed by MPT without a legal basis, was criticized. MPT defended itself by stating that it had never imposed such a scheme and a

improvements and price reductions. This expectation was correct to a certain extent as spelled out in the following section.

Table II-1 shows the number of type I providers in each of the five areas and the number of type II providers. It shows that the number of providers was gradually increased after the 1985 Reform. In the international telecommunications market, however, the number of providers was not increased. Tables I-2, I-3, I-4, and I-5 show the growth of the Japanese international telecommunication in terms of the number of circuits, the number of calls, revenues, and balance sheets, respectively.

C. Impacts of the 1985 Reform

The most remarkable impact of the 1985 Reform on the Japanese international telecommunication was a series of massive price reductions by KDD and NCC. For the 12-year period from 1985 to 1997, the average price of international calls from Japan was reduced by more than two-thirds. As Table II-3 shows, the KDD price of the first 3-minute call from Japan to U.S. during weekdays daytime was 1,530 yens in 1985, which was lowered to the level of 450 yen in October 1996; this is a reduction of more than 70%. The actual average size of price reductions is in fact greater than this, since in 1985 there was no discount program, whereas in 1997 KDD offers a number of price discounts not only to business users but also to home users.

The price reductions expressed by Table II-3 and Figure II-3 may be viewed as a textbook case in which a high monopoly price is driven down toward a competitive level by the entry of new competitors. The development of price reductions in the Japanese international telecommunication was affected by the development in the Japanese domestic long-distance market, since the new entry in the domestic long-distance market started in 1986 whereas the new entry into the international market

new entry from, say, a local market to the long-distance market would be considered favorably.

started later in 1989. Let me summarize, for this reason, the development in the domestic market.

During the period from 1985 to 1991, NTT, with an approval of MPT, reduced the price of long-distance calls and others. NCCs started to compete with NTT in the long-distance market in 1986. In fact, the long-distance rates were lowered continuously and significantly after the middle of the 1970s. The 1985 liberalization accelerated this trend.

The pattern of price reductions in the long-distance market shows the way in which competition worked. NCCs, at the time of entry, set a price lower by 10 to 20% than the price being charged by NTT. Soon after the entry, some of NTT's customers switched to NCCs because of the price difference; the share of NCCs increased gradually. Although the share of NCCs was still low, NTT was threatened by the trend in which it lost the share. NTT responded by lowering its price so as to regain the competitive power against NCCs. Once NTT was allowed to reduce its price, NCCs felt that they might not be acquiring customers as fast as they did before, and introduced further price reductions. Such "undercutting cycles" (i.e., price wars) were repeated one after another.

In the international market, KDD reduced its service price after 1979; the speed of price reductions became high after 1985, at which time MPT made it clear that competition would be introduced into the international market. The largest reduction was made in 1988, one year before two competitors entered into the market. Competition in the international market was keener than in the domestic market, because users in the international market were mostly business firms; they were more sensitive to the price difference between KDD and NCCs than residential users.

In the international telecommunications market, price reductions were so rapid and significant that the price charged by KDD and that by NCCs became almost equal one year after the introduction of competition. In fact, since the competition in the international market started two years later than the competition in the domestic market did, it must have been clear to KDD that MPT was determined to apply asymmetric price regulations until the two NCCs gain a significant share in the international

market. Furthermore, not only the share but also the revenue to KDD started decreasing rapidly immediately after the entry of the two NCCs in October 1989 (See Table I-4 and Figures I-4A, I-4B). For these reasons, KDD reduced its price in November 1989, and again in April 1990; the price of KDD in April 1990 was set equal to that of NCCs. That is to say, KDD, unlike NTT in the domestic long-distance market, applied for, and MPT approved of, a price reduction so that the new price be set equal to the current price of NCCs. Table II-3 and Figure II-3 explain the process of price reductions since then. Starting the price reduction in December 1994, it became customary that KDD undercut the NCCs, although in that case the NCCs retaliated one or two months after KDD's move.

As seen in Table II-3 and Figure II-3, the speed of price reductions was slowed down for the four-year period from 1990 to 1994; it is sometimes stated that the international telecommunications market of Japan had reached an equilibrium state; further price reductions may be difficult. In November 1995, however, KDD once again reduced its price significantly. The price of the first 3-minute call from Japan to U.S. via KDD dropped from 600 yen to 480 yen. One can see, from Figure I-4A, the speed of increase in the international telecommunications revenue dropped after 1994. Although no official statistics is available, there is a reason to believe that the slowdown of the increase in the revenue came from the entry of "call-back" providers. Thus, the reduction of prices by KDD in December 1995 may be explained by the emergence of call-back services. More recently, KDD cut prices in October 1996, and NCC followed in December 1996.

Figure I-4A shows the change in the revenues to KDD and NCCs for the period from 1989 and 1995. It is seen that KDD's revenue from telephone services decreased slightly from the level of 203 billion yens in 1989 to 196 billion yens in 1995. On the other hand, the revenue to NCCs increased from nothing in 1989 to 92 billion yens in 1995. The share of NCCs in telephone services in 1995 was 32%.

Because of this rapid increase in the share of NCCs in the international market, the need for

asymmetric price regulations by MPT seems to have ceased in the early 1990s. One evidence that MPT must have determined this way is its approval of KDD's plan for the price reduction in December 1994 to a level lower than the current level of NCC's price. As will be explained in Section D, the competition in the international telecommunications market entered into a new era around 1994 by the emergence of call-back providers. This trend will likely be accelerated after 1997 by the emergence of Internet telephone services and international public-private-public line services; the deregulation needed for these new services was promised by the Japanese government as a result of the conclusion of the WTO telecommunications negotiations in February 1997.

D. The need for more competition and the divestiture of NTT

It seems that the Japanese international telecommunication entered into a new stage of development in the middle of the 1990's. There are three factors indicating this: (i) the nationwide debate on the divestiture of NTT, (ii) the emergence of call-back and Internet telephone services, and (iii) the conclusion of the WTO negotiations for liberalizing basic telecommunications services. The debate on NTT's divestiture dominated for several years almost all discussions on Japanese telecommunication, domestic or international. For the international telecommunications market, it produced the driving force to introduce more competition. In this section, we summarize the debate and its consequences, emphasizing those related to international telecommunication.

The Japanese Telecommunications Business Law of 1985 states that a revision of the law shall be called for three years after 1985. In 1988, MPT decided to postpone revising it for the reason that it was only two years after the major reform. On the other hand, the 1985 NTT Law states that a revision of NTT's organization shall be called for five years after the Law was implemented. In 1988, MPT asked the Council of Telecommunications to consider possibility of restructuring, perhaps dividing, NTT.

In October 1989, the Council filed with MPT an interim report on Japan's telecommunications industry. This report suggested division of NTT. Three alternative plans were stated: (i) NTT be divided into two entities, one long distance carrier and one local operator. (ii) NTT be divided into one long distance carrier and several local operators. (iii) NTT be divided into several regional operators, each responsible for long distance and local operations. In addition, other suggestions are included in the interim report on fair competition between NTT and NCCs, internal reorganization of NTT for furthering efficiency, investment by NTT for accelerating the digitization of switches, and others.

The final recommendation by the Council on restructuring NTT was filed with MPT in March 1990 along the lines suggested in the interim report. MPT, however, facing strong oppositions by NTT and major business groups, compromised to agree that it was still too early to make decision on breaking up NTT and that a longer time-period would be needed for further investigation and discussion. This decision was affected by certain political factors.⁹ Thus, MPT gave up an idea to divide NTT in 1990; it was stated by the government that a further assessment of reorganization of NTT would be initiated in 1995.

In the spring of 1990, NTT started an advisory committee to consider promotion of fair competition and other matters related to it. A plan was announced in the spring of 1991 that NTT's mobile telephone operations would be divested in the summer of 1992. NTT had already divested its enhanced service department in 1988; it became "NTT Data Communications, Inc.," a special type II

⁹ Ministry of Finance (MOF) opposed to breaking up NTT for the reason that the price of NTT's stocks would fall (it actually did when the possibility of dividing NTT was reported) and the revenue to the government from selling them would be decreased. The owners of NTT's stocks opposed for the same reason. Furthermore, a majority of the Japanese business community (represented by Keidanren and other groups) expressed a view that division of NTT would be too radical a solution for promoting competition in the Japanese telecommunications market. The Socialist and the other opposing parties, holding a then majority in the Upper House of the Japanese Diet, were considered to be a factor which would stop any attempt to break up NTT at that time, because of a close relation between the Socialist Party and the influential labor union of NTT.

provider.¹⁰ A number of policies for fair competition with NCCs was carried out by NTT.¹¹

The deadline for considering the restructuring of NTT was set to be the end of the 1995 fiscal year, i.e., March 31, 1996. MPT pursued the policy of divesting NTT starting in 1985. It failed twice in its attempt to achieve this: first in 1985 and then in 1990. The 1995 fiscal year deadline seemed to be the last chance for MPT to achieve its long pursued goal: divesting NTT. On the NTT's side, opposition to its divestiture was strong on the ground that NTT would be most efficient when staying as a single entity; in particular, in order to compete with other global carriers such as AT&T, MCI, and BT, NTT needs to stay in one piece. MPT's position to this was that the monopoly power of NTT, particularly the bottleneck monopoly in subscribers access services, was slowing down the speed of the development of the Japanese telecommunications industry; a division of NTT would introduce more competition and the speed of growth of the industry would be greater.

The nationwide debate on dividing NTT started in the fall of 1994, when MPT formed an informal committee to investigate the issue. This committee produced a report in March 1995, recommending that NTT be divided into one long-distance company and two or more regional companies. A formal committee to investigate the same issue was formed within the Telecommunications Council in April 1995. A majority of the members of this committee came from the informal committee. This formal committee filed a report in February 1996 with the Telecommunications Council; the main contents of the report were essentially the same as that of the informal committee. The Council approved the report in February 1996, recommending that NTT be divided into one long-distance and two regional companies. The Japanese government, however, having received this report, decided once again to postpone the final decision until the end of 1996.

¹⁰ Today, NTT Data Communications is the dominant provider in the type-II market.

¹¹ They include additional installation of POIs (point of interfaces), connection points between NTT's network and NCCs' network, regulation of internal use of information on customers which NTT acquired, improvement in NTT's accounting system so that the revenue and the cost of services be stated separately, and disclosure of information of NTT's network and customers to the general public.

Oppositions by NTT and by other business groups, particularly by the association of telecommunications equipment manufacturers (the 'NTT family') and NTT's Labor Union, were so strong that the confrontation seemed to continue endlessly. Thus, the government recommended MPT and NTT consult directly to seek a solution on this issue.

During the years of 1994 and 1995, extensive debates took place in conferences and symposiums, in professional and popular journals, and in mass media, on the issue of possible divestiture of NTT. The general public, all in all, criticized both MPT and NTT. By that time, global alliances had been formed by major telecommunications providers in the world; Japanese providers seemed to have left behind since they were caught by the issue of restructuring NTT. In U.S., the Congress was working toward a major revision of the 1934 Communications Act. Furthermore, by that time, statistics showed unmistakably that the speed of the development of the Japanese telecommunications industry was lower than that in U.S. and other advanced countries (See Tables IV-1 and IV-2). Some stated that the quality and the price of the Japanese telecommunications services could not compete even with those in some Asian countries.¹²

The general public criticized both MPT and NTT for the low performance of the industry. MPT was criticized for its excessive regulations. In particular, its five-area scheme¹³ compartmentalized the industry and prevented competition from being developed. For instance, NTT was prohibited from entering into the international telecommunications market. After heated discussions, MPT agreed that it would remove any barrier if such existed, thus allowing telecommunications and other providers to enter into any market regardless of the type of services, fixed or mobile, and domestic or international. Although MPT never issued a formal statement on this decision, its impacts were profound. First, NTT, if it agreed with divestiture, would be allowed to enter into the international market. Second, KDD would be strengthened by being allowed to

¹² See the discussion in Section H for an in-depth explanation of this.

participate to domestic telecommunications business. Third, other providers such as TTNNet, a Tokyo-based regional provider backed by the powerful Tokyo Electric Company, could enter into the profitable long-distance market. Fourth, it opened a way to form mergers and alliances freely by the initiative of providers, not by the initiative of MPT.

The critiques by the general public was also directed to NTT, stating that NTT still relied on the old-fashioned monopoly power by, for instance, slowing down the speed of opening its local and access networks. NTT quickly responded by announcing a plan to open its networks for interconnection at far more points than before. Behind this, one can point out that, in U.S., interconnection was a major issue in the attempt to revise the Communications Act of 1934 for promoting competition in all of the telecommunications markets.

In December 1996, MPT and NTT reached an agreement on a plan for restructuring NTT. Its outline is as follows. (i) NTT shall be divided into three corporations: NTT Long-Distance, NTT East-Japan, and NTT West-Japan; a holding company will be established to possess all of the shares of the three companies. On one hand, NTT East-Japan and NTT West-Japan together with the holding company shall continue to be “special companies” to be regulated heavily by MPT. (ii) On the other hand, NTT Long-Distance shall be under no direct regulation of MPT. In particular, NTT Long-Distance shall be allowed to enter into the international telecommunications market. (iii) MPT also decided to allow KDD to supply domestic telecommunications services. (iv) In addition, MPT decided to abolish a part of Article 10 of the Telecommunications Business Law, which authorized MPT to block new entries into an area of the telecommunications industry on the ground that the entry may produce excess supplies. Article 10 contradicts directly to the idea of free entry and the promotion of competition.

The announcement of this agreement gave the general public a sense of relief. The long-

¹³ See Section B.

lasted confrontation between MPT and NTT seemed to be over and the possibility of new development of the Japanese telecommunications industry seemed to emerge from the horizon. The announcement was made in December 1996, and the year of 1997 was expected to be with new moves toward more competition.

E. The development in 1997

This section summarizes the most recent development of the Japanese international telecommunication.

In October 1996, a couple of months before the agreement between MPT and NTT on divestiture of NTT was announced, JT (Japan Telecom, an NCC in the domestic long-distance market) and ITJ (International Telecom Japan, an NCC in the international telecommunications market) signed an agreement to merge themselves; formally, JT will absorb ITJ (see Exhibits 2 and 3). The objective of this merger was clear; it is to integrate the resources of JT for domestic long-distance services and the resources of ITJ for international services. The two would be stronger by being one. For example, customers would need to sign only one contract to receive a single statement for their domestic long-distance and international calls. The merger, having been approved by the Japanese Anti-Trust Committee, actually took place in October 1997.

The merger of JT and ITJ left KDD and other NCCs (DDI and TWJ in the domestic long-distance business and IDC in the international business) in a position to look for new alliance. In August 1997, it was announced that KDD would form an alliance with DDI. The announcement did not go to the extent that a merger would be formed by the two. The move by KDD and DDI in the summer of 1997 was driven by the merger announcement by JT and ITJ in 1996. These moves left TWJ in the domestic long-distance market, and IDC in the international market, to be the only NCCs having participated to no alliance yet. Since the Toyota Motor Company, the leading automobile

assembler in Japan, has a large portion of the shares of each of the two companies, it was once speculated that, in the near future, at least an alliance, and possibly a merger, by the two may be realized. Further, there was a report that KDD would like to utilize the power of the Toyota Motor Company, which has been backing TWJ strongly with an intention to enter into the fast-growing telecommunications business. Later in the fall of 1997, it was announced that KDD and TWJ would merge in 1998. It means that the tie between KDD and DDI would be weaker than was originally planned. Thus, the Japanese domestic long-distance and international markets are being reorganized into three or four groups: (i) NTT Long-Distance-International, (ii) JT and ITJ (new JT), (iii) KDD, TWJ, and DDI, and (iv) IDC (yet to join to one of the three groups?). IDC is reportedly seeking an alliance with the NTT group, but there is no report that NTT would agree with it (see Exhibits 1 and 3).

In March 1997, the Japanese Cabinet approved a proposal to revise the three telecommunications laws: the Telecommunications Business Law, the NTT Law, and the KDD Law; bills were sent to the Diet. Behind the government, the ruling LDP (Liberal Democratic Party) was the actual decision maker. The Diet, also controlled by the LDP, approved the bills in June 1997 after some debates. Divestiture of NTT, as proposed by MPT in December 1996, shall be completed by the end of the 1999 fiscal year. KDD's entry into the domestic market shall be allowed soon. In fact, KDD started to supply domestic telecommunications services in July 1997.

The article restricting new entry into the telecommunication market (a portion of Article 10) was abolished in the revised Telecommunications Business Law. Further, articles specifying the obligations and the procedures for interconnection, unusually long and detailed as articles of the Japanese telecommunications laws, were introduced anew. A provider controlling "essential facilities" for communication shall be designated as "the special provider," bearing strong obligations for interconnection.

A trend of new development in the Japanese international telecommunications market came

from the emergence of, and the rapid increase in, call-back services. In the past and recent years, the price of international calls was far higher when originated in Japan than when originated in U.S. (See Tables IV-1 and IV-2). For this reason, there was a lot of room to produce profits from call-back services. Not only direct call-back from U.S. to Japan, but also “indirect call-back” connecting Japan to a third country through U.S., often produced profits. As a result, starting around 1994, U.S.-based call-back services through subsidiaries located in Japan were expanded rapidly. Although no official statistics on this trend has been disclosed by MPT, indirect evidences show that a large part of the recent increase in the international telephone traffics came from call-back services. It is reported that, in 1997, there are 100 call-back operators in Japan, and their total revenues reach to a level of 10 to 30 billion yens per year.

MPT has taken a position to allow, if not to promote, call-back services as long as they are consistent with the directives of ITU issued in October 1996. That is to say, call-back services using the incumbent providers facilities illegally should be prohibited, and those connecting Japanese customers to a country in which call-back is prohibited should be prohibited in Japan, too. MPT made this point clear in July 1997 by issuing a document, although MPT informally expressed a view years before that legal call-backs would be allowed in Japan.

Another factor promoting competition in the Japanese international telecommunications market came from the development of Internet and Internet-related technology together with the WTO agreement in February 1997. As a consequence, Japan promised, among others, to allow international public-private-public line services by abolishing MPT’s regulation of prohibiting them for a long time. MPT made this point clear by issuing a document to request comments on it in July 1997. In addition, MPT also announced that, prior to the approval of public-private-public line services, Internet telephony would be allowed in October 1997; MPT requested comments on this point, too.

All of these, once materialized, will change the Japanese international telecommunications market substantially. We are in a position to forecast what will be the trend in the near and the distant future.

Part II. ANALYSIS OF COMPETITION AND GLOBALIZATION TREND--WHY DOES NOT JAPANESE TELECOMMUNICATIONS PROVIDERS POSSESS THE COMPETITIVE POWER IN THE GLOBAL MARKET?

F. MPT's asymmetric regulation and the resurgence of NTT's natural monopoly

In Japan, promotion of competition is a keyword commonly pursued by all of the participants to the telecommunications markets: users, providers, and the industry regulator (MPT). Before the 1985 Reform, NTT was the monopoly provider in the domestic market, and KDD in the international market; NCCs (new common carriers) were allowed to enter into the domestic long-distance and the international markets. As a consequence, there was a remarkable decrease in service prices in the two markets, although the price decrease came not only from the introduction of competition but also from the massive reduction of cost in the long-distance transmission, i.e., from the introduction of optical fibers. In contrast to the success of promoting competition in the domestic long-distance and international markets, the local and the access services have been left under monopoly; NTT remained to be the only provider of these services. As for other markets which newly emerged in the 1980s and 1990s, MPT adopted a policy to introduce multiple providers from the outset. Typically, in the mobile communications market, users were able to choose a provider from the NTT family (such as NTT DoCoMo) or one of NCC providers. The presence of multiple providers, together with the rapid growth of the demand for mobile communication, brought a great deal of benefits to users through price reductions and service improvements. Thus, all in all, MPT's policy to introduce competition seems to have been successful.

One of the regulatory tools used by MPT for promoting competition in the domestic long-distance and international markets was asymmetric regulation. MPT treated the newcomer NCC more favorably than the incumbent NTT or KDD during the period that the NCC was in the infant stage. Asymmetric price regulations, as explained in Section C, were used as the main tool. Other asymmetric regulations including "informal guidance" were also used.¹⁴ As a consequence, by the end of the 1980s, NCCs in Japan obtained a substantial portion of the market share, not because of their own technological or managerial competence, but because of the assistance from the regulatory body. Since MPT introduced asymmetric regulations without a solid basis of laws or rules, i.e., by means of direct and discretionary use of their regulatory power, it drew critiques from media and the general public. As the market share of NCC is increased, however, MPT gradually removed its asymmetric regulations and started to treat NCCs and NTT, or KDD, equally. Various forms of deregulation, strongly demanded by the public during the time of the debate on the divestiture of NTT, accelerated this trend.

In the year of 1997, however, a warning signal on competition started flashing. Possibility of resurgence of "old natural monopoly" by NTT seemed to emerge. First, in the mobile telecommunications market, NTT DoCoMo, a subsidiary of NTT, became the dominant carrier rapidly; its share in the mobile market exceeded 50% in 1997. If the current trend of the increase in the share of NTT DoCoMo continues for a few years more, it may become the monopoly provider in the cellular market. The main reason for this seems to lie in its price competence and technological superiority.¹⁵

Second, in the domestic long-distance market, there is a significant difference in the

¹⁴ It is reported that the introduction of a number of new services having been developed by NTT were blocked by MPT until NCCs became ready to supply similar services.

¹⁵ Young users of cellular phones reported a rumor that NTT DoCoMo's services are virtually seamless all over Japan, but NCCs services are not. As a consequence, there has been a massive switching of subscriptions by young users from NCCs to NTT DoCoMo.

profitability between NTT's long-distance department and NCCs. The former produces annual profits of several hundred billion yens, whereas the latter barely breaks even. Teleway Japan, a long-distance NCC, still suffers from red figures in its current account. In the past, NTT's local and access operations were cross-subsidized heavily by NTT's long-distance operations. For instance, the digitization of all switches, including those for user access and long-distance transmission, was a consequence of this cross-subsidization. Once the divestiture of NTT is executed in 1999 and the NTT Long-Distance-International became an independent provider, this massive profit could be used for price reductions, investment for service improvement, or investment for international operations. In any way, NCCs will likely be outperformed by the future NTT Long-Distance-International.

In summary, NTT DoCoMo is expanding its share rapidly in the mobile communications market, and NTT Long-Distance-International will have the power to dominate the domestic long-distance market in the near future. In the international telecommunications market, it will take a longer time for NTT Long-Distance-International to gain a significant share, although a quick way for NTT Long-Distance-International to do this is to enter into the resale business by leasing circuits from foreign providers such as AT&T or C&W.

In the local and the access markets, in addition, the monopoly power of NTT will continue to prevail. NCCs competing with NTT in these markets are those providers backed by the electric power companies. The leader is TTNNet, serving in the Tokyo Metropolitan and the nearby areas. There is a possibility that a strong competition is developed in the local markets by this group of NCCs. Competition could be accelerated by the implementation of the interconnection provisions introduced in the new Telecommunications Business Law. However, it will take some time for significant competition to be developed in the local markets. One reason is that it will take time for the NCCs to lay down transmission facilities (optical fibers). Another reason is that NTT could cross-subsidize its local services from its access services, since MPT failed to recognize the need for separation, structural

or accounting, of the two operations.¹⁶

Thus, there is a possibility of resurgence of natural monopoly both in the mobile market and in the long-distance market. The current telecommunications laws, even after their recent revision in June 1997, do not provide with safeguard against this. MPT seems to have been too busy in pushing ahead in 1995 and 1996 the divestiture of NTT and in responding in 1997 to the recent attempt to reorganize the cabinet and the ministerial system of Japan (Gyokaku) which involves reorganization of MPT, to prepare for the possible resurgence of NTT's natural monopoly.

It should be pointed out that the possibility of the resurgence of NTT's natural monopoly arises from the fact that the competitive power of NCCs is not strong enough to outdo NTT. NCCs' growth was a consequence of MPT's asymmetric regulations, not of their own technological or managerial competence. A question arises naturally from these observations why Japanese NCCs were not able to possess technological or managerial capability to compete with NTT, whereas, in U.S., OCCs were. For instance, the introduction of competition in U.S. was started in the 1960s by MCI's initiative for long-distance services by means of microwave transmission. An attempt will be made in Section H to give a partial answer to this question.

Another question also arises from these observations. Given that the technological and the managerial efficiency of NCC does not exceed that of NTT, is it (and, was it) at all desirable for MPT to introduce competition into the Japanese telecommunications markets? The author of the present paper believes that the answer to this question is a strong Yes. The evils of monopoly, e.g., the absence of incentives for improvement, will harm users so strongly that it is always desirable to introduce competitors, real or potential, into the market even with asymmetric regulations in favor of newcomers. By the way, the need for asymmetric regulations arises from the fact that fixed cost

¹⁶ This statement on the possibility of cross-subsidization presumes the continuation of NTT's monopoly in its access operations. If this monopoly is broken by, say, rapid development of wireless access, then true competition will emerge in both the local and the access markets.

accompanies a new entry.

Thus, we conclude that the regulatory body need to study the tradeoffs between two undesirables, the evils of monopoly and the inefficiency of newcomers, together with a study of the dynamics of entry and (possible) exit of newcomers. It may be recommended that the regulatory authority make an announcement to reregulate service prices, etc., when the dominant carrier's share of a market reaches a certain prescribed level.

G. Globalization trend (?)--Why are Japanese providers, particularly NTT and KDD, slow to move toward globalization?

In theory, *globalization* of telecommunication means that telecommunications services, in whole or in part, may be purchased and supplied globally, i.e., across the boundary of countries. When *perfect globalization* prevails, all activities in telecommunication would be performed as if there were no boundary at all. Telecommunications business in the distant future may be close to such an extreme. Telecommunications business at the present time, or that in the near future, however, is far from it; we still need to consider the presence of borders when talking about globalization.

The reason that the word globalization became popular recently is that major telecommunications carriers such as AT&T, BT, and others, tend to do their business across borders. In particular, three alliance groups have been formed worldwide by major telecommunications carriers: World Partners led by AT&T, Concert by BT and MCI, and Global One by DT, FT, and Sprint. It is even projected that the world telecommunications markets will soon be dominated by these three alliance groups, or at least, the markets will become oligopolistic around the three.

There is no doubt that to any telecommunications carrier will be important cross-boundary activities. However, cross-boundary activities in telecommunications business, unlike those in manufacturing, have many aspects of complexities. They arise from the complexity involved in the

process of producing and supplying telecommunications services. Below, we discuss briefly on this point in order to understand the recent activities of the Japanese telecommunications carriers from the standpoint of globalization.

Let us start with considering the process of manufacturing production, which is easy to understand. Speaking briefly, manufacturing production transforms raw materials into final products. In the production of automobiles, for example, raw materials such as steel, plastic, rubber, glass, and others are transformed into a passenger car. Intermediate products, such as various parts of a car, may be considered explicitly in the process of manufacturing production. Thus, the entire process of manufacturing production may be viewed as a sequence of sub-processes. In each sub-process, outputs are produced from inputs with the combined work by labor and capital (machines, equipment, structures, land, etc.). Technology plays an important role there. Finally, management governs a sub-process, a sequence of sub-processes, or the entire process altogether. The study of business and industrial organization is concerned with the structure and the operation of various forms of management. Thus, in short, we can state that the components of a manufacturing process are raw materials, intermediate products, final products, labor, capital, technology, and management.

Now, to deal with the question of globalization in manufacturing, one needs to consider which component of a manufacturing process crosses country borders. When raw materials, intermediate products, or final products move across borders, we say that foreign trade takes place. Movement of labor across borders is immigration or emigration, and movement of capital is foreign direct investment (FDI) or foreign indirect (i.e., financial) investment. Cross-border movement of technology takes various forms including, but not limited to, selling or licensing patents and teaching or learning aboard. Management, too, acts or moves across borders. Combination of cross-border activities produces various forms of globalization such as cross-border cooperation, formation of foreign subsidiaries, cross-border M&A, and multi-nationals. Thus, it is straightforward to

understand globalization of manufacturing production; it may be of a textbook matter.

Globalization in telecommunication, however, is not so easy to understand. First of all, a telecommunication provider used to be a monopoly, doing everything needed to supply customers with telecommunications services. Consequently, we are not accustomed to recognize each of the components of the process of producing telecommunications services separately. Second, the process of producing telecommunications services cannot be considered as a sequence of sub-processes as in manufacturing production. In the production of telecommunications services, there are physical capital such as cables, conduits, switches, and buildings, in addition to technology, labor, and management. There is no "intermediate products" as in manufacturing. In telecommunications services, however, hardware and software components may be distinguished. In fact, under digital technology, the software part of a telecommunications service may be divided into a number of "layers,"¹⁷ each of which corresponds to a sub-process in manufacturing.

Third, the production of telecommunications services is characterized by its network feature. That is to say, inputs for the production of telecommunications services, at least hardware elements, are physically dispersed over a geographic region or over a number of locations. The core of telecommunications business lies in combining systematically these network-type elements to produce integrated services to subscribers. In the old age of the monopoly provider, such complexity arising from its network features was hidden within the management activities of the monopoly provider. In the age of competitive multi-providers, this complexity generates varieties of combining, integrating, and organizing activities in the production of telecommunications services. The presence of regulatory authority adds further complexity to the telecommunications business such as the complexity involved in the regulation of interconnection and unbundling.

It may be observed that the logical structure of the process of producing telecommunications

¹⁷ Examples are the seven layers in OSI (open systems interface), and the four layers in the ATM (asynchronous

services is similar to that of computer services; the distinction between hardware, operating systems, software, and information contents is seen both in telecommunications and in computers. Thus, a portion of the complexity in telecommunications business may be understood by studying computers business. The telecommunications system, however, is far greater in size than a computer system, and the locational dispersion of a telecommunications network is not shared by a computer system. For this and other reasons,¹⁸ the promotion of competition exploiting the characteristics of the components of the process of producing services is not so thoroughly done in telecommunications as it is in computers. That is to say, a telecommunications provider at the present time tends to do by itself everything from constructing conduits and cables to providing advanced telecommunications services. In other words, vertical integration as well as horizontal (locational) extension still characterizes the activities of present-day telecommunications providers. Indeed, as we see in many countries, a small number of providers, integrated vertically and locationally, compete each other, although, in the future, more competition will come into play through further division of labor, vertical and horizontal.¹⁹

Globalization became popular in the telecommunications industry at such a time. In other words, competition across country borders was conceived of at the time when domestic competition is still in its beginning stage. Thus, it is understandable that major telecommunications providers, particularly those in advanced countries, form a group to promote cross-border cooperation, since this is an economical way to exploit cross-border economies of scale, scope, and networking.

Furthermore, an oligopolistic division of the global market by a small number of groups of major providers is suggested. In the future, when competition is developed for each "component" of the process of producing telecommunications services, cross-border activities at a "component level" may

transmission mode) standard.

¹⁸ Other reasons include the history of telecommunications (such as the presence of a monopoly provider) and the presence of regulatory authority.

¹⁹ For the discussion in this paragraph, see H. Oniki, "Japanese Telecommunications as Network Industry: Industrial Organization for the BISDN Generation Technology" *Telematics and Informatics*, Vol.11, No.3, 1994, pp.205-215.

emerge.²⁰ At the present time, however, we only see cross-border activities of the process of producing telecommunications services as a whole, i.e., cross-border activities by a provider as a whole.

Let me now turn to the issue of globalization by Japanese carriers, particularly those by NTT and KDD. It is frequently reported that the globalization by NTT and KDD are unexpectedly slow. Until recently, MPT was blamed for the absence of globalization activities by NTT, as MPT prohibited NTT from engaging in international activities. However, after MPT made it clear to allow NTT to enter into international markets, the speed of globalization activities by NTT seems still low. This may be surprising when we take into account the fact that NTT has completed a major investment projects of the size of several hundred billion yens per year, i.e., the digitization of its subscriber and the long-distance switches. In other words, NTT is in a position to seek a new objective for investment, and investing abroad is an obvious possibility; yet its globalization activities are still low. NTT appears to become an integrated provider of multimedia services in the domestic market, rather than a global player.

During the year of 1997, NTT has established a Type II subsidiary and a Type I subsidiary, both for international operations. Further, NTT America applied for, and obtained, a license for international business in U.S. on the resale basis. Aside from these, major overseas activities by NTT in 1997 were its participation to the MSC project in Malaysia and the initiation of constructing a telecommunications network in a northern part of the city of Hanoi in Vietnam. NTT's activities in India may be mentioned, too. Although the current president of NTT has repeatedly emphasized the importance of NTT's globalization efforts, these records indicate that NTT has spent only a small fraction of its investment fund for globalization.

When it comes to KDD, we note that it is a corporation created for international

²⁰ Today, we see it to a limited extent; an example is exports and imports of telecommunications equipment.

telecommunications operations. It has a worldwide telecommunications network and its branch offices are located in major countries worldwide. KDD's initiatives during the recent years, however, have been directed to domestic operations in Japan, not to globalization. KDD made an announcement to lay down a fiber ring around the Japan Islands, which is directed mainly to the domestic long-distance operations in Japan.²¹ KDD America and KDD Europe are acting to obtain customers abroad; however, the main targets are the branch offices of the Japanese corporations located abroad. Thus, one has to state that, even with KDD, globalization activities are progressing slowly.

H. Absence of comparative advantage with Japan on telecommunication--Why?

In the preceding two subsections, it was pointed out that in the domestic telecommunications markets of Japan, particularly in the mobile and the long-distance markets, the growth of NCCs seems to have reached a limit as a consequence of the removal of asymmetric regulation by MPT. It was also pointed out that, in spite of the recent trend of globalization in the telecommunications industry, NTT and KDD have not taken a bold step toward expanding their business for globalization; their concerns seem to be directed inward, rather than outward. An explanation of these observations, regrettable to the author of the paper as a Japanese, is the absence of comparative advantage with Japan on producing telecommunications services. In other words, the overall driving force for growth and development of the telecommunications business is weaker in Japan than in other advanced countries, especially than in U.S. Further, the overall driving force for growth and development of business is weaker in the telecommunications sector than in other sectors, typically manufacturing sectors, in Japan.

Casual observation of the timing to introduce new telecommunications services, such as

²¹ KDD calls it JIH (Japan Information Highway).

touch-tone, call-waiting, call-forwarding, caller-ID, and others, by NTT relative to that by AT&T seems to confirm this. For instance, it has been customary for NTT to start supplying a new telecommunications service several years after it had become available in U.S. and in other advanced countries. This difference in timing to introduce new services may not be surprising to those working in the Japanese telecommunications sector. However, it is surprising to those working in the Japanese manufacturing sector, since the power to compete in the global markets is quite high in Japanese manufacturing sectors, such as automobile production, production of electronic appliances, and production of computer memory chips.

In short, we see the absence of comparative advantage with Japan on producing telecommunications services. Why?

The present author would like to answer to this question by presenting a hypothesis which points out the difference in the *mode of coordination* in work organization between Japan and other countries, typically U.S. In short, the coordination in Japanese organizations, private or public, is characterized by its *depth*. There are some cultural, social, historical and other reasons for this. In Japan, it is common that a relatively small number of workers form a team to do any given task; it may be R&D work, production management, industry regulation, university administration, or even recreational activities. The members of a team are supposed to understand each other very well, thus forming a team with *deep coordination*. Exchange of information within a team is very rich and the team is tightly integrated. In contrast to this, a Japanese team is relatively closed to outside, and the exchange of information across the boundary of the team is far less than the exchange of information inside it. Such a team, on one hand, fits to a job of which the extent of works needed is not very wide. Manufacturing production (such as production of automobiles) is a typical example. On the other hand, however, a team with deep coordination does not fit to a job of which the relations and interactions needed for its good performance are extended to a wide-range, i.e., to a *network-type* job.

Production of computers, telecommunications services, and most of the information-related services is of this type. Public regulation of the telecommunications industry is also a network-type job, as it is concerned with interactions between the regulatory body and providers.

Coordination in U.S. organizations is of a type opposite to deep coordination, which we call *wide coordination*. Workers may form a team or a group, but it is not informationally closed to outside. Members spend time and effort not only for communication within themselves but also for communication with the outside world. Thus, workers with wide coordination can make a significant progress in developing and producing network-type products and services, such as computers, softwares, and telecommunications services.²²

Let me state two examples of the shortcomings which arise from deep coordination, i.e., the absence of wide coordination.

The first is for the operation of NTT in introducing new services. At the present time, NTT offers two different subscriberships to residential users. One is the telephone service, which is the traditional PSTN (access provided by means of analogue transmission). The other is the ISDN (*ISN* 64), which offers a fully digital access, but with which an analogue telephone terminal can still be used via a DA-AD converter (TA: terminal adapter). Furthermore, the price of a message unit for voice call is identical between PSTN and ISDN; in short, an ISDN subscriber can purchase from NTT the basic telephone services at the same conditions that a PSTN subscriber can.²³

Now, NTT has introduced a number of discount services to PSTN and ISDN subscribers. It has been customary, however, that the timing of introducing a new discount service to ISDN

²² For a full discussion of this point, see H. Oniki, "Why did Japanese producers perform very well in manufacturing automobiles and electronic appliances during the 1970s and 1980s, but quite poorly in providing PC and other IT services in the 1990s?" (mimeographed)

²³ An ISDN subscriber, of course, can purchase a number of digital transmission services from NTT at an additional cost. Furthermore, an ISDN subscriber is supplied with a capacity equivalent to two PSTN lines. The monthly fee for one ISDN subscribership is lower than the monthly fee for two PSTN subscriberships. Therefore, it is cheaper to switch from one-line PSTN subscribership to one ISDN subscribership than to obtain one additional PSTN line (for, e.g., fax). For this reason, the number of subscribers to ISDN is rapidly increasing in Japan.

subscribers is delayed by several months to a couple of years behind the timing to PSTN subscribers.

A likely explanation of such systematic delays is the following. First of all, there is no reason that NTT wishes to introduce systematic delays in offering new discount services to ISDN subscribers; rather, NTT would plan, if possible, to introduce new discount services to PSTN and ISDN subscribers simultaneously. The delay arises from the way in which the software needed to introduce a new discount is developed and implemented within NTT. Since the number of PSTN subscribers is still far greater than that of ISDN subscribers, it is likely that the software for a new discount is developed within the PSTN department. Such a software is used for recording calls and constructing bills; note that no software is needed to control switches. Once the software for a new discount is completed in the PSTN department, it is offered to PSTN subscribers. The ISDN department, of which the operating scale is far smaller than that of PSTN, cannot develop a software for the same discount by itself. Therefore, the ISDN department waits for the completion of the software for the new discount in the PSTN department, and, upon its completion, obtains and implements it to its ISDN billing system. It takes some time for the ISDN department to do this. In short, the two departments of NTT, PSTN and ISDN, work as if they were two independent providers for developing and implementing the software. Hence, the time of offering a new discount to ISDN subscribers is delayed behind the time that the same is offered to PSTN subscribers. This is a consequence of the absence of wide coordination, i.e., a coordination between the two departments.

Suppose that, contrary to the reality, NTT were operating under wide coordination. The process of offering new discounts to PSTN and ISDN subscribers would then be different as described below. After introducing one or two new discounts with delays between PSTN and ISDN subscribers, the top management would realize that such delays could be avoided by developing the software for a new discount more systematically. One way to do this is to divide the software into two parts: one for the part needed to perform recording and billing for the new service, and the other for implementing a

recording-billing software to the existing PSTN and the ISDN accounting systems. The former needs to be developed each time a new discount service is introduced. The latter, however, could be used repeatedly for new discounts to be introduced later. Needless to say, some standardization and coordination, i.e., initial investment, is called for to do this. In the long run, however, such division of a software into two parts would be rewarded, since repetitive works for implementing a software developed for PSTN accounting to ISDN accounting could be avoided, resources would be saved, and there would be no delays. The delays in the timing introducing new discount services to ISDN users indicates that such an interfacing activity between the two departments is missing. This is a consequence of the absence of wide coordination.

What has happened within NTT may be something like the following. Both the PSTN department and the ISDN department are more or less independent groups; coordination is deep within each of them, but coordination between the two departments are minimal. No doubt there are workers and managers who have realized that some interfacing activities are needed for efficient implementation of new discounts to PSTN and ISDN departments. It is difficult, however, for the two departments to spare some resources (manpowers, i.e., software writers) for the interfacing activity beneficial to NTT as a whole, since each of the two departments operates under the principle of using its own resources for its own objectives only. If there were powerful management overseeing and controlling the two departments, an interfacing activity could be financed. Because of the dominance of deep coordination, however, each department is closed informationally; the management might not be able to obtain information as to the need for the interfacing activity and the estimated cost to do it.

Let me present a second example of the shortcomings arising from the absence of wide coordination in the telecommunications industry. It is a case of the inefficiency in public regulation.

First of all, we all agree that, in the telecommunications industry, we cannot avoid receiving public regulation in spite of the fact that the promotion of free competition by means of deregulations

is desirable. It is of a textbook matter to mention the reasons of the need for regulation: the network property of telecommunications systems (scale and scope economies), the need for universal services, the need for standardization, the need to use public properties such as the right of way and the electoromagnetic wave (frequencies), bottleneck monopolies such as the one in access services, and so on. They arise from technological, managerial, and historical reasons. The speed of the development of the telecommunications industry, therefore, depends on whether or not one can have an effective regulatory body.

Now, MPT is a Japanese organization. Hence, it is governed by the principle of deep coordination within itself, not by the principle of wide coordination. Members of MPT work intimately among themselves. The average intellectual level of the members of MPT is high. In spite of this, because of the absence of wide coordination, MPT is relatively closed informationally. Information flows from MPT to the outside world and information flows from outside to MPT are relatively small. This brings about a number of shortcomings.

First, MPT's regulations tend to become conservative and slow. As we all know, the technological and the economic environment of the telecommunications industry today is dynamically changing. New technologies and services emerge every day. Providers are active in domestic and international telecommunications markets. The amount of information MPT needs to collect in order to reach a correct regulation is large and increasing. Further, MPT tries to avoid committing mistakes. A consequence of these is a series of conservative and delayed decisions by MPT in many regulatory matters.

From the viewpoint of providers, the informational closeness of MPT means a great deal of uncertainty in preparing new services. The amount of information flowing out of MPT as to what MPT is considering and planning is limited; providers are forced to do some guess-works of MPT's intentions and to lobby members of MPT. This works as a negative incentive for providers to

develop new services. In the long run, as a consequence of these, the speed of the development of the telecommunications industry is lowered.

One evidence of the insufficient flow of information between MPT and providers is that the "quantity" of the laws and the rules for telecommunication in Japan is far less than that in U.S. (see Exhibit 6 for a rough comparison). In other words, the laws and the rules in Japan only give overall directions for regulation; they do not provide with detailed principles or orders, not to mention regulatory procedures. As a consequence, the power to decide regulatory details rests in the hands of MPT, which uses it without supplying with information needed for providers to invest in creative activities. Furthermore, because of the absence of procedural rules, it is virtually impossible for a provider or a user to bring a case to a court. Consequently, very few court decisions exist on Japan's telecommunications regulations. This adds further uncertainty to the business environment.

Thus, in short, the absence of wide coordination between the regulator and providers in Japan's telecommunications industry is a reason that the speed of the development of the industry has been lower than in U.S. and in other advanced countries.

The remaining questions to the hypothesis of deep vs. wide coordination for explaining the absence of comparative advantage with Japan on telecommunications and other information-related industries are the following. (1) What social and economic factors in the Japanese society (or in Japanese organizations) produce and support deep coordination, not wide coordination? (2) Is it possible to change the mode of coordination in Japanese organizations from deep one to wide one? If yes, how?

I. Conclusions

In this paper, we summarized the history of Japan's international telecommunication after the 1985 Reform including the divestiture of NTT. We also investigated two problems. The first is the

trend of the resurgence of NTT's natural monopoly in some of the domestic telecommunications markets; it arises from the absence of the competitive power with NCCs. The second is the slow actions for globalization by NTT or KDD; the basic reason for this lies in the absence of comparative advantage with Japan on producing telecommunications services.

All of these observations, the author of the present paper has argued, is an outcome from the characteristics of Japanese organizations. Thus, Japanese organizations, private or public, are characterized by *deep coordination*, as contrasted to *wide coordination*, which is common in organizations in other advanced countries, particularly in U.S. Organizations with deep coordination perform well in producing manufacturing goods. Organizations with deep coordination, however, do not fit to producing telecommunications services; Japan does not have comparative advantage on telecommunications. After all, the postwar economic growth of Japan was achieved on the success of producing a number of manufacturing goods from textile to automobiles. Today, Japan still possesses significant comparative advantage on producing automobiles, electronic appliances with high-value-added, and a variety of manufactured goods produced on advanced technology.

From the observations stated above, we can deduce a forecast on Japan's international telecommunications in the near future. (1) The effective price of telecommunications services in Japan will continue to be higher than that in other advanced countries, particularly, than in U.S. (2) The globalization activities by Japanese telecommunications providers will be limited; they will not seriously attempt to compete in the global market in supplying with facility-based services or application services. It is possible for Japanese providers to obtain a significant share in some of the overseas niche markets such as the market for Japanese corporations located abroad, but the weight of the revenue from such activities will be fractional in the entire revenue. (3) Major targets for investment and marketing by Japanese providers will be sought domestically; immediate targets are mobile services, Internet services, CTI (computer-telephony integrated), personal access services, etc.

After some years, broadband services including those for transmission of video-data may become a major target. (4) Since the effective price of telecommunications services will continue to be higher in Japan than in other advanced countries, particularly than in U.S., pressures will mount for foreign telecommunications providers to supply their services in Japan. Japan's import of telecommunications services will grow first in applications services, then basic services provided on the resale basis, and finally facility-based basic services. However, because of "natural trade barriers" in telecommunications, such as those arising from the scale and the scope economies in telecommunications networks, the sunk-cost property of telecommunications investment in facilities, the difference in languages, etc., the increase in Japan's import of telecommunications services will be slow and gradual. It is possible, however, some of the recently developed services, such as call-backs and Internet telephony, may be imported to Japan at a relatively high speed. It is inconceivable, in spite of these, that the share of the imported services in Japan's telecommunications market will exceed the level of, say, 20 or 30% in the near future.

The regulatory body of Japanese telecommunications, i.e., MPT, is in the stage of transition; the style of its regulation is changing from the traditional direct governance of all telecommunications activities in Japan to the style desirable in the future, in which the role of the regulatory body is to help the industry form competitive business environment for encouraging the creativity and the initiatives by private providers. Some of the recent evidences of such transition in MPT are the introduction of interconnection provisions in telecommunications networks and the straightforward acceptance of the WTO agreement in February 1997.

Finally, the author of the present paper would like to point out that there is a possibility for the Japanese society as a whole to experience a major structural change of the type which takes place only once in several decades, i.e., a change comparable with the Meiji Restoration in 1868 (the change of the Japanese society from feudal to modern) and the defeat in the World War II in 1945 (the change

in the Japanese society from military to industrial). The difficulties in the Japanese society at the present time and in the near future are so widespread and serious that the pressures for a major change may gather a significant power within a few years. The cause of the difficulties in the Japanese society is basically the same as the cause of the absence of comparative advantage with Japan on telecommunication; it is the absence of wide coordination. For this reason, it is possible that a major structural change of the Japanese society, once it becomes a reality, strengthens Japan's telecommunications industry so that it gains the power for Japanese telecommunications providers to play significant roles in the global market.

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