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Deregulation in the Japanese Telecommunications Market: New Regulatory Schemes

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1. INTRODUCTION

When we make an international comparison of macroeconomic statistics such as GDP, growth rate, and savings rate, the performance of the Japanese economy is still quite favorable among OECD member countries. However, when we refer to the figures of the information or telecommunications industry such as the rates of telephone calls, or the penetration rate of Internet and CATV, the Japanese indicators show a relatively poor performance, although it is widely acknowledged that the 21st century will be an information or multimedia society.

The trends of the world's telecommunications market have been undergoing dynamic changes reflecting the following structural shifts in its environment: (a) technological progress; (b) convergence of services; (c) globalization; (d) economies of speed; and (e) new policy trends. Technological developments in the field of telecommunications are progressing most rapidly among all industries, and can be summarized as digitalization and huge capacity of transmission, and interactivity. The convergence of services in telecommunications and broadcasting has broad implications: (i) convergence of services; (ii) convergence of network; (iii) convergence of business; and (iv) convergence of terminal.

Internet as a telecommunications tool makes another kind of broadcasting possible, called 'webcasting'. This is an example of (i). CATV telephony and Internet telephony are examples of (ii), since both utilize the telecommunications network for broadcasting. (iii) implies a CATV company starting telecommunications service. An example of (iv) is TV sets being used for the Internet. The structure of the telecommunications market is heavily dependent upon technology, and technological progress is sometimes quite abrupt and drastic: new technologies such as Internet telephony or webcasting are continuing to be developed and are transforming the market.

Globalization has integrated overseas markets, and new global alliances are widely being reported. Globalization is thus diminishing the disparities between domestic and international telecommunications carriers, and is creating new competitors to domestic carriers. Policy trends observed throughout the world point to the promotion of competition in order to increase efficiency in the telecommunications market. Japan cannot isolate itself from these trends. The problem is that those structural shifts have been occurring quite abruptly and drastically. Thus, speed is required in business decisions not only among telecommunications carriers, but also in other industries. Policy-makers also cannot rely on the traditional scheme of regulation, since it would not be possible to catch up with these trends under rigid regulations; deregulation is the solution.

This paper discusses the characteristics of the Japanese telecommunications market and public policy by focusing on the changes that have and have not taken place, and what kind of changes are necessary in order to create a more dynamic telecommunications market. As a result of deregulation, new regulatory schemes such as an interconnection rule was implemented, and price-cap and universal services are under consideration. These new schemes will be presented.

2. RESULTS OF THE FIRST REFORM OF 1985

A major reform was carried out in the Japanese telecommunications market, beginning in 1985, and a brief history of the reforms is provided in Table 2.1.

Table 2.1: History of Deregulation and Competition in the Japanese Telecommunications Market

	1985	86	87	88	89	90	91	92	93	94	95	96	97	99
PRIVATIZATION	PRIVATIZED			NTT DATA SEPARATED		DIVESTITURE RECOMMENDED, BUT DEFERRED		NTT DCC/MAG SEPARATED		DIVESTITURE RE-DISCUSSED		DIVESTITURE DECIDED		DIVIDED
COMPETITION	STARTED	LONG DISTANCE LEASED CIRCUIT LOCAL LEASED CIRCUIT		LOCAL TELEPHONE										
ACCESS CHARGE			LONG DISTANCE TELEPHONE			¥30 / 3 MINS			¥12.5 / 3 MINS	¥10.46 / 3 MINS		¥9.2 / 3 MINS	¥8.21 / 3 MINS	
POI								ONE POINT PER PREFECTURE IN PRINCIPLE		NCCs CAN SELECT ANY SITE THEY WISH				
REBALANCING OF LOCAL AND LONG-DISTANCE TARIFF								CHARGE		PAY PHONE RAISED 30%		MONTHLY BASIC CHARGE RAISED 16.4%		

Source: For 1985-96 data, see Hayashi [1996]. The author has made additions for 1997-99.

2.1. Contents of the 1985 Reform

The aims of the 1985 reform were to promote competition in the market by privatizing giant Nippon Telegraph and Telephone (NTT) and opening the telecommunications market to new entrants.¹ The aftermath of the 1985 reform which was mainly aimed at privatizing NTT, is summarized below:

(1) Entry of new carriers

The number of Type I carriers increased to 153, including long-distance call NCCs such as DDI, TWJ, and JT. The number of Type II carriers also increased to 5,871 (see Table 2.2).²

(2) Rate reduction

Because of new entrants and resulting competition, long-distance calls, for example, Tokyo-Osaka per 3 minutes (daytime on weekdays) were reduced from 400 yen (1985) to 110 yen by NTT (1998), and 100 yen by NCCs (1998) (see Figure 2.1).

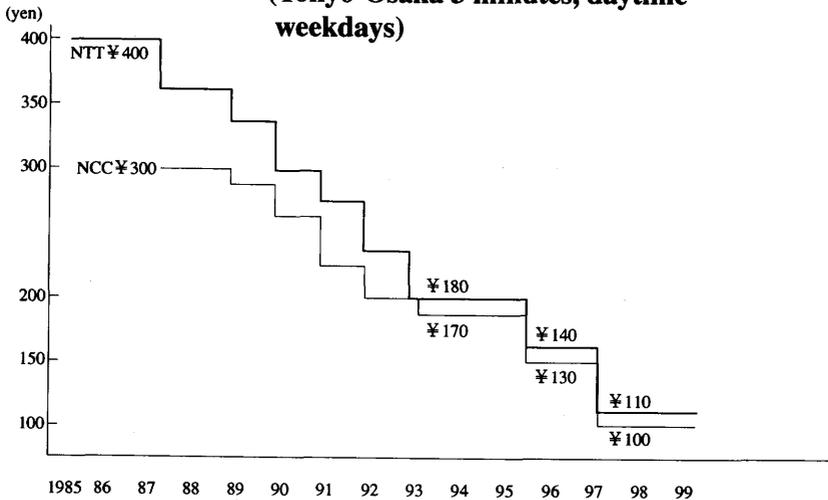
(3) Diversification of services

New services such as a monthly discount for long-distance calls, and a fixed monthly rate for a specific time zone have been introduced, even though the variety of those services were still small in comparison with those of other countries.

Table 2.2: Increase in Number of Carriers in the Telecommunications Market

Date (year/month)	85.04	90.04	93.04	94.04	95.04	96.04	97.04	98.04
Type I Carriers	2	62	80	86	111	126	138	153
NTT	1	1	1	1	1	1	1	1
KDD	1	1	1	1	1	1	1	1
NTT DoCoMo	—	—	1	9	9	9	9	9
NCCs	—	60	77	75	100	115	127	142
Long Distance	—	3	3	3	3	3	3	3
Local	—	7	8	10	11	16	28	47
International	—	2	2	2	2	2	—	—
Satellite	—	2	3	2	2	4	4	5
Mobile	—	46	61	58	82	90	90	84
Type II Carriers	85	841	1,179	1,589	2,107	3,134	4,588	5,871

**Figure 2.1: Declining Rates in Long-Distance Calls
(Tokyo-Osaka 3 minutes, daytime
weekdays)**



2.2. Problems to be Resolved in the Telecommunications Market

The above 1985 reform introduced competition into the market, but did not lead to full deregulation. There still remain the following problems in the telecommunications market.

(1) *Rates raised in monopolistic sectors*

Due to a re-balancing of rates, the rates of long-distance calls were lowered, while those of local calls raised. For instance, the basic charge for NTT's subscribers increased from 1,550 yen (1985) to 1,750 yen (current), and local calls by use of public telephones (3 minutes daytime) from 10 yen to 30 yen.

(2) *Rate gap between Japan and foreign countries*

In spite of the reform plan, there are still big differences in rates between Japan and other foreign countries. For instance, Japanese telephone subscription charges on average are 4-13 times higher than that of the US, the UK, Germany, and France. Domestic long-distance calls are 1.3-4 times higher than the US, the UK, Germany, and France. Short-distance leased circuit line charges are 3-6 times higher than those of New York and London (see Table 2.3).

(3) *Diversification of services*

The US, for instance, offers a much wider range of services than

Table 2.3: International Comparison of Rates

(as of February 1998)

Domestic Long-Distance Call (3 mins. daytime) (Yen)

Tokyo	New York	London	Paris	Düsseldorf
90	131	40	59	113

Mobile and Cellular Phone (basic charge) (Yen/month)

Tokyo	New York	London	Paris	Düsseldorf
4,900	4,233	4,217	5,991	4,186

Domestic Call (basic charge) (Yen/month)

Tokyo	New York	London	Paris	Düsseldorf
1,750	1,222	1,496	1,169	1,492

Non-Recurring Charges (charges required at time of new subscription) (Yen)

Tokyo	New York	London	Paris	Düsseldorf
72,600	66,541	9,617	5,244	6,067

Leased Circuit (64Kb/s, 15km) (Yen/month)

Tokyo	New York	London	Paris	Düsseldorf
65,000	28,000	59,000	46,000	78,000

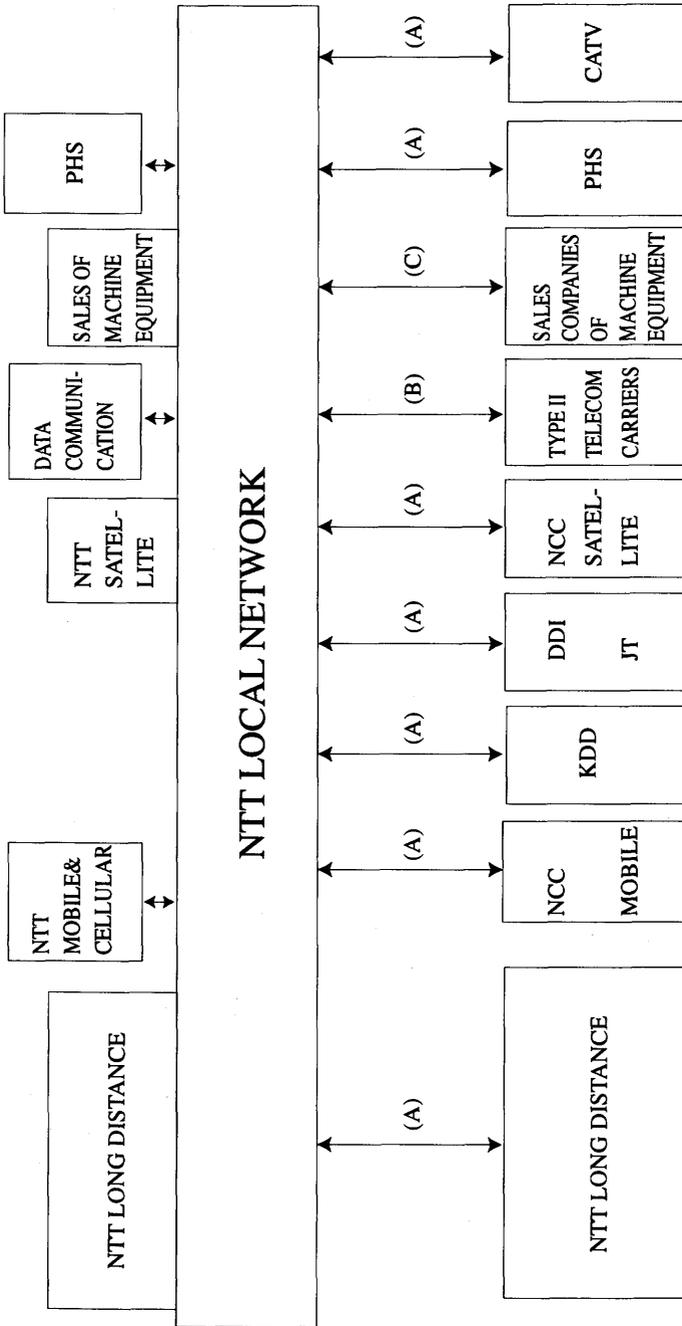
Leased Circuit (64Kb/s, 5,000km) (Yen/month)

Tokyo	New York	London	Paris	Düsseldorf
176,000	244,000	113,000	123,000	200,000

International Call (Index)

Tokyo	New York	London	Paris	Düsseldorf
100	85	51	39	57

Figure 2.2: Telecommunications Market



(A) REQUEST FOR INTRCONNECTION (B) CONTACT FOR USE OF TELEPHONE LINE (C) REPORT TYPE OF EQUIPMENT

Japan; AT&T offers 17 types of discount services for long-distance calls, while NTT only offers 5 types.

(4) *Promotion of competition in the local call market*

In the local call market, NTT maintains a monopolistic hold, accounting for 99% of the market. NTT owns public subscribers' lines, and new entrants to this market have to install their own network in order to compete with NTT. This is far from possible, and a new scheme to open up NTT's network must be introduced to prevent discretionary use.

(5) *Promotion of fair and effective competition: bottleneck monopoly*

NTT still has superiority in terms of technology and information about the network, since public subscribers' lines are owned by NTT as shown Figure 2.2. All carriers have to use this network to reach each subscriber, and NTT thus has superiority in obtaining information on other carriers' traffic, for instance. NTT makes use of this asymmetry of information. Another example is as follows; NTT began VPN (virtual private network) service in February 1994, while NCC started a similar service in May 1995. The reason for this difference was that NTT refused to provide the latter service due to technological difficulty.

NTT also makes use of private information for purposes other than the original ones.

(6) *Promotion of cross entry between domestic and international, and long-distance and local markets*

Because of network externality, cross entry is a significant issue faced by companies in the domestic and international markets, local and long-distance markets, and communications and broadcasting markets. As a result of the 1985 reform, however, all markets were segmented, and there was less pressure of competition from competitors from other markets. NTT was not allowed to enter the international call market, and KDD the domestic market, for example. Thus, the degree of competitiveness in the segmented markets is different from the other. Separation of the market has the following disadvantage.

(7) *Enhanced international competitiveness*

Globalization of the telecommunications market is so expensive that big carriers have been developing related activities all over the world. Cumulative overseas investment by major carriers between 1987 and 1993, for instance, are as follows: BT US\$10.4 billion,

AT&T US\$9.2 billion, and NTT US\$0.1 billion. This is due to the prohibition of NTT's international call business. In addition to this, strategic alliances were formed among major carriers to cope with global mega-competition such as World Partners by AT&T, Concert by BT and MCI, and Global One by Deutsche Telekom, France Telecom, and Sprint. Japanese major carriers do not belong to any of these international alliances.

(8) *Inefficient management at NTT*

There were 310,000 employees at the time of privatization in 1985. By the end of fiscal year 1994, this number was reduced to less than 200,000. On the other hand, the ratio of the sum of personnel expenses and work consignment fees to NTT's total expenses increased from 41.8% to 47.9%. In order to achieve efficiency in management, rationalization was inevitable.

(9) *Rate of return regulation*

As stated previously, even though rates were substantially reduced for some services, they were still quite high internationally. This was partly due to the scheme of price regulation. In the UK and the US, the reform at that time included price-cap regulation. This forced carriers to reduce rates as well as provide an incentive for efficient management. Japan retained the rate of return regulation, and this kept rates high. In addition, in those countries new entrants were not subject to price regulation, and they could offer new services at lower prices. Incumbent carriers, in turn, offered those services at lower prices. These processes led to rates being greatly lowered.

In sum, the 1985 reform had some positive effect in promoting competition in the telecommunications market, but it was not complete. In particular, NTT retained its dominant position, and this is the reason for the second reform, which will be discussed in the next section.

3. RESTRUCTURING NTT: THE SECOND REFORM

As a measure to promote competition, the divestiture of NTT was first raised in 1981. Since then, this idea has often been discussed from time to time. It was finally settled on December 6, 1996, and after necessary legislation a new NTT will be born in the summer of 1999. This will be the biggest change in the Japanese telecommunication market. Here, the background and contents of NTT reform will be presented.³

3.1. Basic Viewpoints Behind the Restructuring

As stated earlier, in order to reform the Japanese telecommunications market, the biggest issue is the status of NTT. This is not only due to its size but also its characteristics such as having a bottleneck monopoly of the telecommunications market. Let us summarize the policy goals related to the restructuring of NTT again as follows:

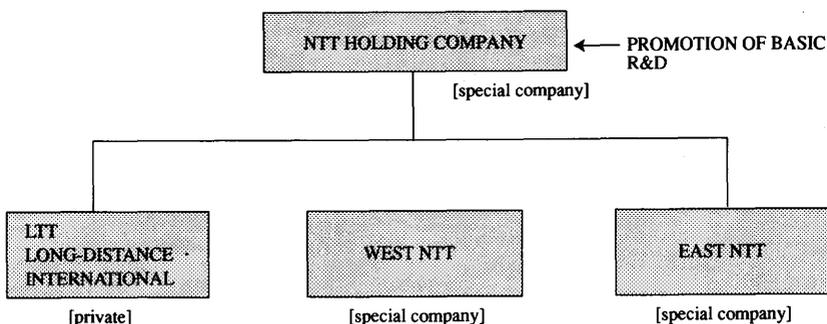
- (1) Promoting fair and effective competition, especially creating competition in the local call market. There is no need for further explanation. After the 1985 reform, there was no entry into the local call market.
- (2) Making the scope of business strategy of NTT as flexible as possible. As a private company, NTT can make business decisions more freely than when it was under the jurisdiction of the Ministry of Posts and Telecommunications (MPT). Another example is admitting NTT into a segmented market such as that of international calls.
- (3) Creating dynamics in telecommunications industries; furthering user benefits such as lowered rates and diversified services.

3.2. The Structure of NTT

On December 6, 1996, the final status of NTT was determined as follows. NTT has been divided into four companies—a long-distance call company, two regional telecommunications companies, and a holding company. The new holding company owns three other telecommunications companies by holding all stocks of those companies. As for research and development (R&D), the holding company inherits the current NTT's R&D, and particularly undertakes basic R&D, while applied R&D is carried out by long-distance call and regional telecommunications companies (see Figure 2.3).

The long-distance NTT will be completely privatized, but it will be able to expand its operations to international telecommunications, CATV, and content and other new businesses as well as regional telecommunications.

Two regional telecommunications companies—East NTT and West NTT—divide the market between themselves. The former includes areas such as Hokkaido, Tohoku, Kanto, Tokyo, and Shinetsu; the latter Tokai, Hokuriku, Kansai, Chugoku, Shikoku, Kyushu, and Okinawa. In order to secure the provision of telephone service nationwide, these com-

Figure 2.3: The Structure of NTT

panies are treated as special companies. Companies will be allowed to enter each other's businesses (cross entry) and enter the telephone, CATV, and content and other businesses outside their operational areas.

Even if those new telecommunication carriers are owned by the holding company, the conditions for fair and effective competition is expected to be secured. On the other hand, NTT continues to be engaged in R&D and is expanding to other activities related to overseas business and investment, in order to satisfy the needs of global telecommunications demanded by multinational companies. This is the compromise to opposing opinions to the divestiture, and in this sense it is called 'virtual divestiture'.⁴

MPT prepares the necessary legislation such as the Anti-monopoly Law, Commercial Law, Capital Gains Tax, and Consolidated Tax. Under current legislation, a 'pure' holding company is prohibited, and the divided NTTs have to pay an extra tax by changing the form of the company.

3.3. Basis of Restructuring NTT

(1) *Preliminary conditions for fair and effective competition*

The most important reform for restructuring NTT lies in the introduction of 'yardstick' competition in the local call market and direct competition in the long-distance call market in order to eliminate a bottleneck monopoly. Yardstick competition is the first attempt to introduce an incentive regulation into the telecommunications market.⁵ As for regulation on pricing, the current rate of return regula-

tion will be replaced by a price-cap regulation, which will be discussed later. On the other hand, two regional telecommunications carriers compete indirectly through yardstick competition. This gives an incentive to improve the efficiency of management.

Other local carriers such as CATV and local NCCs are under asymmetric regulation, that is, their change in rates are deregulated; they do not have to submit their change of rates for authorization, but only notify the authorities beforehand. Because of this asymmetric regulation, control of the market by NTT's local telecommunications companies such as price leadership can supposedly be prevented.

(2) *Strengthen international competitiveness*

Regarding overseas business deployment and aggressive strategic global alliances among mega-carriers, the size of KDD is not large enough to compete with foreign carriers. Dynamic domestic competition among multiple carriers over a certain size can lead to improvement in international competitiveness. Thus, a new NTT long-distance company can enter the international call market, and reciprocally, international carriers such as KDD can enter the domestic call market. Alliances and mergers among Japanese domestic and international carriers have already started.

(3) *The new NTT and R&D activities*

One of the strongest opposing opinions against the divestiture of NTT is that it will lower the international competitiveness of NTT in areas such as R&D capability. NTT research institutes are renowned for having able personnel as well as abundant research funds. NTT's R&D is a 'national asset' and the divestiture of NTT may weaken its R&D capability.⁶ Establishment of a holding company would be a compromise; the smaller size by divestiture to reduce monopolistic power, and the bigger size as a consolidated form to provide enough funding for R&D.

(4) *Lowered rates and more diversified services*

The NTT reform plan indicates that local NTT telecommunications companies must guarantee equal access by all carriers to their local network. The regulatory scheme regarding the interconnection rule, including access charges, will be decided later. Securing smooth interconnection is indispensable for realizing improved competition and new service at an early stage, and lowering overall rates for telecommunications industries on the basis of a low-cost struc-

ture, since all telecommunications service rates depend upon the rate of the local network as interconnection rates.

3.4. Elimination of a Bottleneck Monopoly

Needless to say, a monopoly is an obstacle to fair and effective competition, and carriers with monopolistic power tend to have a lack of incentive to reduce the cost of production as well as to improve the services to consumers. A monopoly, which faces not only a monopolistic but also a competitive market, may further reinforce such obstacles in the latter. Therefore, in order to create dynamism in the telecommunications market and promote fair and effective competition, it is necessary to eliminate a bottleneck monopoly.⁷

Because of technological progress, new carriers have emerged such as mobile telephone, PHS, CATV, and regional NCCs which were established by electric power companies. Those carriers must link up with NTT's monopolistic regional network, otherwise they cannot expand their services. If the present rate system and constraints on NTT's local network are taken for granted, it is unlikely that those regional telecommunications carriers will be able to compete with NTT. It would also be difficult for them to establish their own network, since it is far more costly and inefficient in terms of resource allocation. In order to promote competition in the local public network, the monopolistic power of local NTTs must be reduced.

3.5. Further Issues after NTT Reform

Divestiture of NTT is not the end of reform in the Japanese telecommunications market. The following issues still exist after NTT reform, which are also related to the status of the new NTT.

(1) *Ensuring interconnection of all other carriers*

In the multimedia age, all carriers, content providers, etc. will utilize the local network for their services. NTT's local telecommunications network should guarantee equal access to those players. In so doing, the interconnection rule and interconnection charges must be legislated.

The following issues should also be noted: (a) asymmetric information: The rule deals with asymmetric information to the extent possible, such as obliging carriers who own superior information to

disclose it and to accept proof of effort; (b) international harmonization: Because of the globalization of telecommunications, a framework should be constructed in accordance with those of other countries; and (c) revision of rules: In the telecommunications industry, technological innovation is rapid and new services are constantly emerging. Rules should be revised according to changes in these conditions.

(2) *Ensuring universal service*

NTT must fulfill the requirement for universal service in telecommunications, and it did this by cross subsidization. That is, universal service was financed by the monopolistic profits derived mainly from the long-distance call market. At present, universal service is still partly financed by this, and partly by raising the rates of each service. Since the long-distance NTT will be separated, local NTTs will not be able to utilize this financial scheme anymore. The scheme of universal service will be an urgent matter after divestiture, since West NTT is currently suffering from negative profit and is expected to have a loss. Actually in fiscal 1996, according to the consolidated accounting of the NTT regional offices which comprise West NTT, they lost US\$41 million in telephone services, while East NTT gained US\$500 million. Thus, NTT as a whole yielded positive profits, which financed universal service costs.

In addition to this, since many new carriers such as mobile telephone, local NCCs, and CATV will have access to NTT's local network, it would not be reasonable to have only NTT bear the burden of universal service. They should also share its cost equally. Thus, a new scheme for universal service is to be established. In the US, universal service has been financed by the access charges of long-distance carriers to interconnect to the local network. The scope of universal service and the scheme to finance it are major issues facing all countries.⁸

4. RECENT DEVELOPMENTS IN THE TELECOMMUNICATIONS MARKET

After settling the matter of NTT status, new developments related to deregulation were observed in the Japanese telecommunications market.

4.1. Emerging New Services

Due to recent steps toward deregulation, new services such as a monthly discount for long-distance calls and a fixed monthly rate for a specific time zone have been created which provide consumers with more selections as well as a reduction in charges. These services, however, are not new to other countries, and they are already widely provided as marketing strategies by carriers in, for example, the US and the UK. The following are examples of new services in Japan:

(1) *Discount for high volume usage*

Credit card companies have started to provide discounts of up to 20% when bills are paid by credit card. This was made possible by a tie-up between credit card companies and telecommunications carriers.

(2) *Interconnection of leased circuits with the public switches network*

In 1996, the regulation for the resale of leased circuits was abolished, and this made it possible for leased circuits to be connected with NTT's public switches network. Another result of this deregulation is that any company, not necessarily carrier, which owns a leased circuit, was now able to enter the telecommunications market. So far, Type II telecommunications carriers, trading companies, and affiliates of electrical appliance and automobile companies have introduced services for not only firms, but individual subscribers as well. A characteristic of this service is that rates have been made much lower through the use of a leased circuit, i.e., 30 yen less than NTT daytime rates on weekdays and nearly half the rate at night and on weekends. Those services are called call-back in the international call market and resale, and have already been introduced in other countries and contribute to the reduction of rates.

(3) *Interconnection at the Group Center (GC)*

NCCs were now able to interconnect with subscribers' lines at the GC, which is the exchange at the city or town level, instead of at the Interconnecting Gateway Switch (IGS) or the Zone Center (ZC), which primarily provides that service at the prefectural level, and thus entered the market for neighboring message areas within a distance of 20 km. This led to increased competition in that particular market and lower rates.

4.2. Emerging Local NCCs and Other New Entrants

Until a few years ago, the local call market was monopolized by the giant NTT, but new carriers and services are now emerging in the market.

(1) *Local NCCs*

Nine local NCCs including TNet, CTK, and OMP, which were mainly established by electric companies, have entered the local call market by utilizing their own network. Their share of the market is however minimal, namely, 2%. TNet started its service in 1997 and charges 9 yen for 3 minutes, 1 yen less than NTT which currently charges 10 yen.⁹ Local NCCs are expanding their network not only to large users such as firms, but also to individual households. They may eventually become a real threat to NTT.

(2) *Internet telephony*

Technological innovation now allows venture businesses to have telephone service using the Internet. Internet telephony rates are much cheaper, namely, nearly half of NTT's. There are still some disadvantages to Internet telephony such as quality of service, limitation of service areas, and security, but the market is expected to grow rapidly because of its rates.

(3) *CATV*

CATV is becoming increasingly popular but there is yet to be a CATV company which provides telephony service, and this idea is still at the experimental stage. One CATV can only cover a small area, so technological difficulties must first be overcome in order to operate telephony services. In England, however, CATV has become a potential competitor to BT.

4.3. Remaining Issue: Elimination of the Bottleneck Monopoly

In the previous sections, changes in the telecommunications market have been examined. It must be pointed out, however, that some areas remain unchanged, i.e., the bottleneck monopoly of the local call market. The existence of such a monopoly has the following effects: First, although newly emerging carriers which provide cellular phones, mobile telephones, PHS, CATV, and local NCCs, have their own network to connect end users, it is still necessary for them to link up with NTT's monopolistic regional network. Under the present interconnection charges and

interconnection rules made by NTT, it is unlikely that those regional telecommunications carriers will be able to compete with NTT. Second, due to low competition in this market, charges for local calls have not been substantially reduced.

Some policy measures are required to either promote effective competition or to reduce the rates in the local public network, and the divestiture of NTT is an example of the former. The implementation of additional policies to reduce rates in the local call market is also required. This would include an incentive regulation such as a price-cap.

5. CHARACTERISTICS OF COMPETITIVE POLICY AND THE TELECOMMUNICATIONS MARKET

In the discussion in the previous sections, we focused on the market situation such as market structure, degree of competitiveness, and level of charges, and attempted to explain how and why these characteristics occurred. In this section, these issues are discussed in relation with competitive policy.

5.1. Characteristics of Japanese Competitive Policy

Lack of competition and internationally high prices and charges are not particular to the telecommunications market. They are common to regulated industries for the following reasons.

(1) *Policy oriented to suppliers, not to consumers or users*

The philosophy behind Japanese policy in any industry is to promote economic growth, to catch up with Western countries. Suppliers are heavily protected by policies to enhance their international competitiveness; the industrial policy implemented by the Ministry of International Trade and Industry (MITI) is a typical example, which aims to promote strategic industries such as those related to automobiles, semiconductors, and computers. In order to secure the growth of firms in those industries, they received direct subsidies from tax money or public funds, and their authorized prices tended to be higher.

(2) *Policy to adjust demand and supply*

In regulated industries, the number of entrants or suppliers in the market tends to be restricted according to the amount of demand. The so-called 'demand-supply adjustment clause' is found in the

regulatory legislation. This is more or less common to all regulated industries, and this measure is quite powerful, but sometimes applied arbitrarily by bureaucrats.¹⁰ This clause is the source of bureaucrats' power. One reason why only a limited number of suppliers are authorized is that regulators did not wish any firm to go bankrupt, because they authorized such firms to enter the market. MPT is not an exception. The authorization of FM radio stations is an example. There were many applications to open an FM station, but MPT integrated them into two or three stations. In any prefecture, there is one NHK (public station) and one or two private stations, while there are countless FM and AM stations in US cities. MPT would like to avoid the situation of some stations going bankrupt as a result of competition if many were authorized, for which MPT would have to take responsibility.

(3) *Gradualism*

It takes much time to implement any policy. The more important a policy is, the longer the process. This is not due to administration, but due to political process. There are lots of interest groups for any one issue such as 'Zoku-giin' (Dietman working for a certain interest group), factions of the ruling party, business firms, trade unions, etc. Strong leadership is important for enforcing a policy, but in reality there is a lack of leadership. There is a tendency to postpone decision making to the future.

5.2. Characteristics of Competitive Policy in the Telecommunications Market

The common characteristics of Japanese regulation were summarized in the previous section. Telecommunications policy has similar characteristics. Here, by discussing the characteristics of competitive policy in the market, let us examine why Japan has been slow in implementing an appropriate competitive policy.

(1) *Inconsistency among policies*

MPT recognizes the lack of competitiveness in the telecommunications market, which is due to the monopolistic power of NTT. The policy they have been implementing was for the purpose of reducing its power. Looking at the example of AT&T in the US, without the divestiture of NTT it would be impossible. No NCC could compete with NTT in terms of size. The size of a NCC was restricted by

another policy regarding market segmentation, that is, each market was separated and no cross entry was permitted. This prevented NCCs from growing to the extent of having countervailing power against NTT. In the age of network externality, NCCs cannot exploit economies of network.

NCCs were also subject to the same regulation such as rate of return pricing. This was another handicap to NCCs. In other countries, asymmetry regulation was popular; only dominant carriers restricted regulation and they had to submit their rates for authorization, while new entrants only had to send a notice of their rates to the authorities. NCCs thus could not adopt an effective rate strategy to compete with NTT.

(2) *Leadership*

As for the leadership of MPT, the interconnection rule is a typical example. The framework for interconnection, in principle, depended upon the negotiation between carriers. Interconnection was not obligatory and in cases where the interconnection negotiations between carriers failed to reach an agreement, MPT could issue an order to connect or arbitrate. From the same principle, the conditions for interconnection were to be agreed upon between carriers and subsequently submitted for authorization by its minister. Thus, NCCs' VPN service, for instance, mentioned in Section 1.2 took seven years before an agreement was reached.

MPT recognized that the origins of issues facing the market was giant NTT and its monopolistic power. In order to reduce this power, although divestiture was only one alternative, there were other policy options to achieve that goal. Implementation of a fair interconnection rule or allowing them to bypass a NTT facility might help a NCC provide services with lower rates. It was rather late for permitting the resale of leased circuits or call-back, which were quite popular in other countries.

(3) *Information*

MPT did not have enough information to fully regulate NTT, which was unlikely to disclose the necessary information on its own. There were limited ways of collecting the necessary information. As part of the tradition of Japanese bureaucracy, regulatory officials changed their positions in shorter cycles, and had no time to collect information by themselves. Necessary documents or data for regulation were obtained by asking the carrier directly. This is the reason

why a special regulatory agency independent of MPT such as the Federal Communications Commission (FCC) in the US and the Office of Telecommunication (OFTEL) in the UK is necessary, where officials specialize in telecommunications regulation and accumulate advanced know-how, knowledge, and even academic ability.¹¹

5.3. NTT and Competitive Policy

NTT is responsible for the competitive policy in the telecommunications market. NTT has monopolized the market for many years, and it lacks the incentive to improve efficiency or provide better services to its users. As stated earlier, NTT has a high level of R&D capability as well as technology, while its management and marketing is far less efficient. As economic theory suggests, monopolistic power hampers incentive toward efficiency. Discount for high volume users and discount in a specific time zone, and toll free service, for example, were quite late in being offered to consumers in comparison with the US, simply because exchange switches were not built to install devices required to record necessary information. The flat rates system has not yet been introduced. Carriers in other countries offer a combination of various services with various rates to consumers. Consumers can choose the best combination. Carriers have been thus competing with each other by offering better services and cheaper rates, and this creates dynamism and growth of the market. NTT did not consider them necessary for improving consumer service or for generating increased profit through strategic marketing.

5.4. Debate over NTT Divestiture

As stated earlier, it took more than 10 years to achieve NTT divestiture, and in this process, there were many conflicting opinions over the issue. MPT's stance was that divestiture was inevitable to promote competition and consumers' benefits. However, there were other opinions against divestiture, which are summarized as follows.

(1) *Corporate size and economies of scale and scope*

In the age of global competition, corporate size has significant meaning for international competitiveness and R&D capability in the telecommunications market, due to economies of scale and economies of scope. Recent global alliances among mega-carriers

are one phenomenon to exploit the scale merit. Since giant NTT is a national asset, divestiture might spoil this.

(2) *Competitive policy in the US*

During the 1980s, the world trend to promote competition in the market was to separate monopolistic and competitive sectors; namely, that of the long-distance call and local call markets. The reason for this was that when a monopoly provides services in both markets, it utilizes monopolistic power in the latter to manipulate the former. On the other hand, the US Telecommunications Act of 1996 abolishes the market segmentation of long-distance and local call markets, and all carriers and providers such as CATV can participate in the entire telecommunications market. All carriers are expected to compete with a package of services, which include local, long-distance, international calls, mobile, etc. A divided NTT thus has a handicap compared to other international carriers.¹²

(3) *Other measures to achieve policy goals*

There are other policy alternatives to achieve goals such as promotion of competition and lower rates. Nanbu [1997], for instance, suggests utilizing the interconnection rule. Lowering interconnection charges reduces the cost of NCCs and other carriers and providers to utilize NTT's local loop. The introduction of a new pricing scheme such as price-caps will promote competition in rates, and thus benefit the consumers. Divestiture of NTT is too strong a measure, and has harmful aftereffects as stated above.

Even if there are the above alternatives aside from divestiture, judging from NTT's past behavior and management, corporate size will hinder the efficiency and future of the telecommunications market. NTT's local loop is truly a national asset and can be utilized for the development of not only the telecommunications market, but also other industries.

Corporate size will be of less importance in the future in the age of an information society, where the economies of network will become more important than that of scale and scope, and the outsourcing of managerial resources and economies of speed will be two characteristics. Those characteristics are independent of corporate size, and rather small corporations such as venture businesses will be able to exploit them more efficiently.

6. NEW REGULATORY SCHEMES: INTERCONNECTION RULE, PRICE-CAP, AND UNIVERSAL SERVICE

In the course of deregulation in the telecommunications market, new schemes of regulation are being carried out in order to achieve policy goals such as promotion of competition, lowered rates, and more transparent regulation. This can be called the 'Big Bang' of the telecommunications market. In what follows, the new rule for interconnection, price-cap scheme, and universal service will be presented.¹³

6.1. Interconnection Rule and Charges

The framework of interconnection so far was based upon negotiations between carriers, and did not function effectively. Interconnection negotiations took too much time: NCCs' VPN service took seven years, and negotiation with long-distance NCCs took four years from the introduction of the carriers' interconnection charges in 1993. In 1997, the new rule for interconnection was implemented.

(1) *Basic rule for interconnection*

Under the new rule, NTT is obliged to interconnect any essential facility as is technologically possible, and the rule applies to all Type I carriers. Interconnection charges are also calculated according to the new interconnection accounting rule, and costs are itemized for unbundled elements and functions of facilities so that non-designated carriers can use only the elements or function needed for interconnection, and thus bear only the costs related to them. NTT is prohibited to set different conditions for its affiliated firms.

The rule also deals with asymmetric information in such a way that NTT, which owns superior information, must disclose it and accept proof of effort. In the telecommunications industry, technological innovation is rapid and new services are always emerging. The rule is revised according to changes in these conditions.

(2) *Calculation of interconnection charges*

In the US and the UK, interconnection charges are based upon long-run incremental cost (LRIC), which is defined as forward-looking economic costs, not as historical ones. The difference is that the former evaluates costs of facility at the current replacement costs, but the latter at the costs they were purchased. The new

accounting rule is not exactly the same as LRIC, but the costs must be those calculated under the assumption that NTT's management is efficient. New interconnection charges are calculated as 8.21 yen per 3 minutes instead of the current 10.46 yen per 3 minutes.

6.2. Price-Cap

In Western countries, the price-cap regulation has been in effect for more than 10 years and has been widely adopted for public utilities such as electricity, gas, and transportation. In Japan, the legislation for implementing a price-cap for telephone charges was passed by the Diet in May 1998.

(1) *Aims of the price-cap*

Under a price-cap, since carriers are able to freely set rates as long as they do not exceed the cap price, it gives carriers more freedom and incentive in terms of management regarding the rates charged, which, in turn, promote efficiency. Thus, it will no longer be necessary to ask the authorities for their approval of rate changes, as in the previous rate-of-return regulation. This implies that the authorities will not be able to regulate carriers beforehand; rather, they will have to cope with the problems after they occur. The price-cap regulation will lead to a drastic change in the regulatory scheme of the telecommunications market, from *ex-ante* to *ex-post* regulation.

(2) *Services covered by a price-cap*

The price-cap currently being proposed is comprised of the following services and segments of the market: (a) indispensable services for daily life and the economy; and (b) low level of competition. In the latter, rates are kept high and tend to be unfair to the users. In order to determine which services are covered by a price-cap, the following points must be examined: (a) contents of services, characteristics of users, number of users, penetration rates, and future trends of services; and (b) number of carriers, market shares, rate levels, and international rates.

According to these criteria, the following services are thought to be covered by caps: (a) local calls; (b) ISDN; and (c) leased circuits. The current number of ISDN users is not very large in number, but it has quite a high growth rate, and is expected to grow faster than the current telephone market. ISDN will be the basis for multimedia in the future. The main users of leased circuits are business firms and

they are indispensable for business activities, particularly for Type II carriers such as Internet providers. NTT occupies quite a large share in both the ISDN and leased circuit markets, and thus there is less competition.

(3) *Calculation of caps*

The calculation of X-value is of primary importance in price-cap regulation. There are currently two methods: namely, the US method; and the UK method. The former is referred to as Total Factor Productivity (TFP), and the latter can be called the Mixed Productivity Method, by which X is determined according to both actual costs and increase in productivity. The TFP method is transparent, concrete, and more effective in providing incentive. The concept of TFP is quite new to the regulation of Japanese public utilities, and it has yet to be adopted thus far. There is also no significant data of TFP in the telecommunications industry. The UK method uses cost information, thus there is decreased possibility of bringing excess profits to carriers when the scheme is introduced; and the carriers to be regulated are likely to accept it, since it is based on their actual cost information. On the other hand, it has disadvantages of less transparency and a degree of inefficiency. In consideration of this, the method used by OFTEL seems to be suitable to the Japanese price-cap.

(4) *Other regulations resulting from the price-cap*

In the traditional regulatory scheme, most of the important decisions made by the carriers have to be submitted to the regulator for authorization. Rate changes, for instance, must be approved. Under the price-cap regulation, carriers need not do this, thus they can make decisions more quickly and freely. On the other hand, ordinary users such as individual households and competitors may be concerned about the lack of transparency of the charges or their being discretionary to a segment of users. Thus, the price-cap regulation should be supported by a supplementary scheme such as monitoring of charges, and accepting complaints from users.

6.3. Universal Service

Currently, NTT is responsible for securing the stable provision of telephone services throughout Japan, and NTT provides it through the financing of cross-subsidization. Because of competition, NTT may not

be able to maintain this service. Thus, a new scheme of universal service is now being considered.

(1) *Definition and scope of universal service*

Universal service is defined as services that are indispensable to people and given fair access to everyone and everywhere at affordable rates. They are services which satisfy the following conditions: (a) indispensable to everyday life; (b) provided at reasonable rates; (c) accessible to everyone including the aged and disabled; and (d) a secure, stable supply made available throughout Japan, whether in depopulated areas or on isolated islands.

The scope of universal service is defined by considering penetration rates, number of users, and social norm. A typical example of a social norm is the provision of support to low-income families and those who live in isolated areas in gaining access to telephone service. More concretely, it includes services such as telephone service, ISDN, and leased circuits. The reason why these three services comprise universal service is clear according to the above criteria.

The following services and categories should be included in universal service: (a) local calls; (b) access to the telephone directory; (c) access to pay telephones; (d) isolated islands; (e) lifeline services; and (f) low-income households. Additional or selective services such as touch-tone connection and high volume discount are not thought of as universal service, because they are provided to specific users and not to everyone.

(2) *Financial scheme of universal service*

The financial framework of universal service must satisfy the following conditions: (a) competitive neutrality; (b) transparency; (c) efficiency of providers of universal services; and (d) low operating costs. These conditions are generally acceptable, and the financial scheme should be transparent in management, distribution of funds, and share of burden. The framework should not hinder the efficiency of carriers.

Examples of the funding scheme for universal service are as follows: (a) cross-subsidization; (b) access charge method; and (c) fund method. Since cross-subsidization is a scheme carried out under a monopoly, it would not be acceptable. The advantages and disadvantages are well-known as to access charge and fund scheme. The latter seems to be more suitable for the following reasons: (a) since only carriers with access to universal service providers are made to

pay for charges, there is a low degree of unfairness; and (b) there is an incentive to avoid access charges and sufficient funds may not be able to be collected. Even though there is also the cost of administration, fairness among carriers is maintained since it does not depend on being interconnected or not.

It is apparent that NTT is the only potential universal service provider. In addition, under the current NTT Law, NTT is responsible for providing telephone service throughout Japan. In regards to the sharing of the costs of universal service, it would be suitable for all carriers receiving benefits from the telecommunications industry, including mobile and cellular phone companies, to contribute to the universal service fund.

Notes

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¹ The US telecommunications market also underwent reform in 1984. Its characteristic was the separation of AT&T into long-distance and local call companies, in other words, competitive and monopolistic sectors. In Japan, on the other hand, monopoly in the telecommunications market was formally abolished.

² Type I carriers refer to those carriers which possess their own circuits and provide telecommunication services, while Type II carriers include those which do not own circuits and provide contents service by utilizing the circuits of Type I carriers. For the establishment and entrance of NCCs into the market, see Vogel [1996], chapter 2.

³ First mention was made in a report by an internal study group of MPT, and it probed divestiture together with privatization. Bohlin [1997] summarizes the historical process of the divestiture of NTT.

⁴ This term is used by Bohlin [1997].

- ⁵ Other than the telecommunications market, it has been implemented in the railway industry, and was recently introduced in the electricity and gas industries.
- ⁶ NTT opposed divestiture based on this point as shown by AT&T's example. AT&T used to have strong capability for R&D, but after its divestiture, AT&T lost this advantage. This is a common belief in Japan, but Professor E. Norm, Columbia University personally informed me that this assertion is against evidence.
- ⁷ The divestiture of NTT itself is not policy goal to promote competition. It is only one measure toward achieving the goal. According to the experiences of the US and the UK, divestiture would be one of the best alternatives to choose. Regarding this issue, Nanbu [1997] asserts that that introduction of fair access charges is sufficient and divestiture not necessary.
- ⁸ EU is now preparing a new unified scheme for universal service to all member countries. In the US, the Telecommunications Act of 1996 proposed a new scheme.
- ⁹ NTT then started to offer preferential rates, which was the same as TNet's, but only applicable to subscribers in the same area as TNet. This led to the problem of unfair treatment of users in different areas. Later, NTT issued a statement that the rates were experimental and were to be gradually offered throughout Japan.
- ¹⁰ Because of deregulation of telecommunications market, this demand-supply adjustment clause was erased from the Telecommunications Business Law in 1997.
- ¹¹ For other characteristics of MPT, see Tsuji [1999].
- ¹² See Fransman [1997], for instance.
- ¹³ As for the interconnection rule, see Tsuji [1996], and for price-cap and universal service see Tsuji [1999] for more details.

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