Regulatory Reform in Japan

Regulatory Reform in the Telecommunications Industry

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FOREWORD

Regulatory reform has emerged as an important policy area in OECD and non-OECD countries. For regulatory reforms to be beneficial, the regulatory regimes need to be transparent, coherent, and comprehensive, spanning from establishing the appropriate institutional framework to liberalising network industries, advocating and enforcing competition policy and law and opening external and internal markets to trade and investment.

This report on *Regulatory Reform in the Telecommunications Industry* analyses the institutional set-up and use of policy instruments in Japan. It also includes the country-specific policy recommendations developed by the OECD during the review process.

The report was prepared for *The OECD Review of Regulatory Reform in Japan* published in 1999. The Review is one of a series of country reports carried out under the OECD's Regulatory Reform Programme, in response to the 1997 mandate by OECD Ministers.

Since then, the OECD has assessed regulatory policies in 16 member countries as part of its Regulatory Reform programme. The Programme aims at assisting governments to improve regulatory quality — that is, to reform regulations to foster competition, innovation, economic growth and important social objectives. It assesses country's progresses relative to the principles endorsed by member countries in the 1997 *OECD Report on Regulatory Reform*.

The country reviews follow a multi-disciplinary approach and focus on the government's capacity to manage regulatory reform, on competition policy and enforcement, on market openness, specific sectors such as electricity and telecommunications, and on the domestic macroeconomic context.

This chapter was principally prepared by Wonki Min, with the participation of Dimitri Ypsilanti, of the Directorate on Science, Technology, and Industry of the OECD. It benefited from extensive comments provided by colleagues throughout the OECD Secretariat, as well as close consultations with a wide range of government officials, parliamentarians, business and trade union representatives, consumer groups, and academic experts in Japan. The report was peer-reviewed by the 30 member countries of the OECD. It is published under the authority of the OECD Secretary-General.

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Executive Summary

Background Report on Regulatory Reform in the Telecommunications Industry

The telecommunications industry has undergone significant regulatory reform over the last decade. By 1998, 23 OECD countries had liberalised their telecommunication markets, including voice telephony, infrastructure investment and investment by foreign enterprises. The success of this liberalisation process will depend on the presence of a transparent and effective regulatory regime that enables the development of full competition, while efficiently protecting the public interest. This report addresses whether Japan's regulatory regime makes possible a successful liberalisation process by assessing telecommunications regulations in Japan, recent regulatory reforms and their impacts on market performance.

Japan is one of the few countries to have introduced competition in the 1980s, along with the United States and the United Kingdom. Since market liberalisation began in 1985, Japan has introduced many liberalisation measures to encourage fair competition. In particular, following the February 1997 WTO agreement on basic telecommunications services, Japan made significant changes to its regulatory regime such as elimination of the article on the prevention of excessive facilities (so-called "supply-demand" standard for market entry) and foreign ownership restrictions on Type 1 carriers, except NTT. There are no longer any line-of-business restrictions in Japan and many major global companies are beginning to compete in the Japanese telecommunications market. As a result, there is strong competition in the national long distance market and the international market. In addition, the rapid growth of cellular mobile services and telephony services based on cable television (CATV) networks is raising the prospect that these can be an alternative to local fixed voice telephony service, which is currently dominated by NTT. The emergence of utility-based Type 1 carriers could also facilitate competition in the local voice telephony market.

However, in spite of the large number of market players, consumers have not yet benefited fully from liberalisation due to the tariff approval system which lasted until November 1998. Furthermore, many important regulatory safeguards, such as a LRIC (Long Run Incremental Cost) accounting system for interconnection, a universal service funding mechanism, number portability, carrier pre-selection and a method to select mobile licensees when the number of applicants is greater than what can be sustained by spectrum resources, are not in place yet.

In November 1998, the Ministry of Post and Telecommunications (MPT) introduced a tariff notification system, which allows companies to determine their own prices without obtaining approval from MPT except for NTT's local basic services. This decision is a milestone for the liberalisation of the telecommunications market since it finally makes effective price competition possible. However, the remaining regulatory issues should be addressed properly and promptly in order to ensure a fair and transparent competitive environment for all market players. In addition, there is a possibility that the proposed NTT break-up may not be effective to promote infrastructure competition because of the holding company structure. MPT should take necessary steps to establish a more effective regulatory framework in order to promote effective competition, increase consumer benefits and allow market-oriented business activities to develop.

1. Japan's telecommunications sector

1.1 The national context for telecommunications policies

As of 31 December 1997, with telecommunication revenues of $110.0 billion, Japan has the second largest telecommunications market in the world.[1] Its market size is less than half that of the United States ($256.8 billion) but twice that of Germany ($43.6 billion). The incumbent operator, NTT, is the world's largest telecommunications operator with $78.1 billion revenues.[2]

As of 31 December 1997, there were 47.9 telecommunication access lines (*i.e.* the total of fixed access lines and cellular mobile subscribers) per 100 inhabitants in Japan. This is just below the OECD average of 48.9.[3]

In Japan, the telecommunications industry is a core industry and has a significant impact on the entire Japanese economy (Tables 1 and 2). The telecommunications market is expanding rapidly and the level of investment by telecommunications Type 1 carriers[4] is the second largest across all industry sectors.

Table 1. **Market size by Type 1 telecommunications business (FY 1996 annual sales)**

(Trillion yen)

	Electrical Machinery	**Auto-Mobile**	**Electric power**	**Telecom (Type 1)**	**Iron & steel**	**Ship building**	**Gas**
Market size	27.1	20.8	15.1	12.1	6.6	5.4	1.9
Growth rate[1] (%)	8.7	9.6	-0.1	21.0	1.5	5.6	5.3

1. Growth rate from previous fiscal year.

Source: "Outline of the Telecommunications Business in Japan", March 1998, MPT.

Table 2. **Facilities investment by Type 1 telecommunications business (FY 1997 plans)**

	Electric Power	**Telecom (Type 1)**	**Electrical machinery**	**Services**	**Chemicals**	**Real estate**	**Auto-Mobile**
Investment	5.1	4.2	3.5	2.9	1.9	1.6	1.4
Growth rate[1] (%)	5.7	1.9	3.5	-12.0	3.3	2.2	7.2

1. Growth rate from previous fiscal year.

Source: "Outline of the Telecommunications Business in Japan", March 1998, MPT.

1.2. General features of the regulatory regime, telecommunications market and market participants

1.2.1 Brief history

Until 1952, Japan's telecommunication facilities and services were operated through a direct government monopoly by the Ministry of Telecommunications. In 1952, the Ministry of Telecommunications was transformed into a wholly state-owned corporation, Nippon Telegraph and Telephone Public Corporation (NTT), with a monopoly over domestic telecommunications. At the same time, Kokusai Denshin Denwa (KDD), a government-regulated corporation, became the monopoly provider of international telecommunications services. In line with the transformation of the Ministry of Telecommunications into NTT in 1952, the Ministry of Posts was reshaped as the Ministry of Posts and Telecommunications with supervisory responsibilities for NTT and KDD as well as direct responsibilities for postal services, postal savings and postal life insurance.

In the early 1980s, growing business pressure for reform and more flexibility in telecommunications policy resulted in 1982 in a recommendation by the Ad hoc Committee on Administrative Reform for full-scale divestiture and privatisation of NTT. Less drastic reforms were supported by business (*Keidanren*) and by NTT itself. Pressure from the Ministry of International Trade and Industry (with responsibility for the computer and computer services industry) to open value-added network service markets, as well as MPT's recognition that Japan's communication sector needed to respond to new demands for diversified communication needs, also fuelled the pressure for change.

In 1985, by enacting the Telecommunications Business Law (TBL), Japan introduced competition into its telecommunications market. Along with the enactment of the NTT Law, which aimed to give more autonomy to NTT, MPT implemented the so-called "First Reform of the Telecommunications System". Unlike many other countries, which liberalised their telecommunications equipment and services markets separately, under the TBL Japan simultaneously liberalised terminal equipment and introduced competition in telecommunications network infrastructure and services. The Law also made a clear distinction between market participants who own infrastructure and those whose activities are based on leased infrastructure. This distinction remains the basis of Japan's regulatory framework for the telecommunications sector.

With the enactment of the NTT Law in 1985, the process of privatising NTT began[5] and NTT was granted more autonomy in its management. Meanwhile, based on the NTT Law, MPT has the authority to supervise NTT when it carries out activities not stipulated in the NTT Law.

Box 1. **Changes made by the enactment of the TBL (1985)**

- Introduction of competition in the telecommunications market
- Liberalisation of value-added network service
- Liberalisation of sales of telephone sets

While "the first reform of the telecommunications system" in 1985 resulted in the introduction of competition in the Japanese telecommunications market, competition was far from effective. Since market entry and tariffs were subject to individual licensing or approval from the Minister, carriers were not able to make important business decisions without first obtaining permission from the Minister. Moreover, there was no competition in the local telecommunications market, and competition between NTT (or KDD) and the new entrants in long distance and international telecommunications markets was managed by MPT through the tariff approval system.

Although there are still some regulatory issues outstanding, MPT has also made significant efforts at further liberalisation of the telecommunications market since the first reform in 1985. In 1993, MPT decided to allow multi-station operators (MSOs) in the CATV market and, more importantly, to allow CATV companies to offer telecommunications services using CATV networks. In 1996, MPT announced "the second reform of the info-communications system in Japan"[6] which included many important policy changes, notably the break-up of NTT, the establishment of interconnection rules and the promotion of further deregulation such as the introduction of a tariff notification system for mobile companies.

As a result of commitments by Japan under the WTO agreement on basic telecommunications services and the second reform plan in 1996, a number of important changes have been made over the last several years. First, the TBL, NTT Law and KDD Law were amended in June 1997. In terms of the TBL, there were three important developments in favour of ensuring fair competition and enhancing the transparency of the regulatory regime. First, the so-called "supply and demand" provisions[7] used as basis for granting a license were abolished. These provisions, which allowed MPT to determine, on the basis of ensuring a balance between supply and demand, whether a Type 1 license should be provided, were regarded as a symbol of high entry barrier in Japan's licensing regime. Nevertheless, the remaining general public interest provisions in the TBL still give grounds for MPT to block new entry by companies if they cannot meet the examination standards (see Section 2.2.1). Second, a new interconnection scheme, including accounting separation and non-discriminatory interconnection for "designated facilities", was introduced to ensure transparent and fair interconnection conditions between the incumbent and new entrants (see Section 2.2.2). Third, new provisions for a numbering plan were added in the TBL in order to ensure equal access to numbers (see Section 2.2.5).

In May 1998, the TBL was amended to abolish the approval system for Type 1 carriers' retail prices and to replace it with a notification system from 1 November 1998. The amendment also made it possible to introduce price-cap regulation on NTT's local fixed basic service charges where competition is not fully developed (see Section 2.2.3). Together with the relaxation of restrictions on NTT's international telecommunications service, the amendment of the KDD Law allowed KDD to enter the domestic telecommunications market using its own domestic communications transmission lines and communications satellite. Furthermore, the KDD Law was abolished in July 1998.[8] The abolition of this law changes KDD from a special company to a private company and enables it to make autonomous business decisions. In addition, the 20 % foreign ownership restriction on KDD has been lifted, in effect cancelling the reservation Japan had made at the WTO.

In the mobile market**,** NTT enjoyed a monopoly position until 1988. In December 1988, two companies entered the cellular market with analogue technology and in April 1994 MPT introduced competition by allowing four digital cellular mobile carriers to enter each of ten separate regional markets[9]. In April 1994, MPT also liberalised the mobile telephone equipment market by introducing COMA (Customer Owned and Maintained System) which allowed customers to buy their terminal equipment not only from mobile service companies but also from equipment retail shops. This led to significant price declines in terminal equipment and stimulated the growth of mobile services. In July 1995, further mobile market entry occurred when three PHS (Personal Handy-phone System) carriers were allowed to enter each regional market.

Box 2. **Brief history of the Japanese telecommunications market**

1952:	Establishment of MPT
	Establishment of NTT and KDD
1979:	NTT starts mobile services
1985:	Introduction of competition in the telecommunications market
	- Granting Type 1 licenses to new common carriers (NCCs) (three national long distance carriers and two international carriers)
	- Liberalisation of value-added network services
	- Liberalisation of sales of telephone sets
1986:	Privatisation of NTT
1988:	NCCs enter the mobile market
1992:	Separation of mobile business unit from NTT
1993:	Division of the mobile business carrier separated from NTT into nine companies
1994:	Introduction of competition by three or four carriers in each mobile market block
	- Permission for three PHS carriers in each market block
	- Liberalisation of the mobile telecommunications equipment market
1996:	Announcement of NTT's break-up into one long distance company and two regional companies within a holding company structure
	Introduction of tariff notification system for mobile operators
1997:	Liberalisation of international simple resale (ISR) services including Internet telephony service
1998:	Lifting of restrictions on foreign capital investment, except for NTT
	Introduction of tariff notification system for all Type 1 Telecommunications services except NTT's local services
	Abolition of KDD Law (Lifting foreign ownership restriction on KDD)

1.2.2 Break-up of NTT

Efforts to restructure NTT have been at the heart of Japanese telecommunications reform for a long time. The NTT divestiture debate began as early as 1981 when an MPT internal study group proposed the divestiture of NTT together with privatisation. Ever since, this issue has been under debate. However, it was not until 1990 that serious policy consideration was first given to the possibility of breaking up NTT. According to the NTT Law, the status of NTT was to be reviewed within five years after the enactment of the NTT Law in 1985. In 1990, at the time of review, the Telecommunications Council (the Council) recommended the break-up of NTT into one long distance company and a local company. While MPT supported the Council's recommendation as a means of promoting competition, it faced strong opposition from many other interested parties such as MITI, NTT, telecommunications equipment companies, *Keidanren* and the Ministry of Finance (MOF). Many argued that it was too early to decide and the MOF was afraid that a divestiture would adversely affect NTT's share price. By the end of March 1990 a compromise was reached: the NTT mobile business would be hived off into a separate company, and further efforts would be given to improving the efficiency of NTT's operation. In addition, it was agreed that NTT's status would be reviewed five years later.

In 1995, the debate was reopened and a range of proposals was made by government bodies. For instance, a sub-committee of the Prime Minister's Office filed a report which suggested that NTT should be split into one long distance company and four regional companies. The Fair Trade Commission (FTC) also submitted a report emphasising further deregulation rather than the break-up of NTT.[10] NTT's argument against any break-up stressed the importance of an integrated company in order to ensure NTT's R&D function, which was highly regarded as a national asset in Japan. The final report of Council was submitted in February 1996 with a proposal to break up NTT into one long distance company and two regional companies. However the government's final decision was delayed for one year because of political pressure.[11] Finally, the government announced its final decision in March 1997: it maintained the idea of dividing NTT into one long distance company and two regional companies, but also proposed a holding company to ensure unified R&D and manage the shares of the two regional companies.

Box 3. **Changes in the NTT Law**

- NTT will be restructured into one long distance company and two regional companies under a holding company which is not allowed to enter into any communications business.
- The holding company (Nippon Telegraph and Telephone Corp.) will be a special corporation that manages all shares of the two regional companies.
- The holding company is responsible for fundamental research.
- The regional companies (NTT East and NTT West) will be special corporations providing only regional communications services and obliged to provide universal service in their business areas.
- The long-distance company will be a private company that can enter the international telecommunications market.
- The holding company and the two regional companies will be regulated as special companies like the present NTT.
- NTT is allowed to enter the international telecommunications market through its affiliates even before the establishment of the long distance company.
- The changes should be implemented within two and a half years from the date of promulgation (that is, before the end of 1999).

There is a concern that the break-up would not be much effective in promoting local loop competition because of the holding company structure. It is unlikely that NTT East and West will be involved in infrastructure competition, given that it is not in the shareholders' interests for the holding company to allow NTT East and NTT West to enter each other's market. In addition, under the NTT Law, NTT East or NTT West cannot enter long distance markets.

1.2.3 Major drivers of Japanese regulatory development in the telecommunications sector

Five major elements have led Japanese regulatory developments in the telecommunications sector. Although at times one or another of these elements has overshadowed the others, all five have played an important role in moulding the current Japanese regulatory structure.

Catch-up

While Japan is one of the three countries that initiated liberalisation of the telecommunications market in the 1980s, it has never taken a leading role but has followed developments or positions elsewhere on many important regulatory issues. A long history of bilateral telecommunication meetings with the United States and the European Union has helped MPT officials to enlarge their knowledge of the US and the EU regulatory systems. In certain cases, Japan has tried to follow the US model, for example in the original proposals for divestiture of the incumbent. In other cases, such as market entry regulation, it has followed the UK model. Discussions on the divestiture of NTT began in 1981, just after the United States made public discussions on AT&T's divestiture. Although it took more than 14 years after AT&T's divestiture, Japan finally implemented a partial divestiture of NTT despite criticism about the effectiveness of the structure of the divestiture. The catch-up policy tended to result in an incremental approach to the liberalisation of telecommunications market through individual deregulation measures rather than a single comprehensive deregulation package underpinned by a clear goal of creating effective competition.

MPT vs. NTT

For a long time after 1985, one of the MPT's main policy goals has been the weakening of NTT's power by means of divestiture in order to promote competition in the telecommunications market. However, MPT has experienced difficulty in obtaining sufficient political and inter-ministerial support. Because of NTT's political strength, due to its more than 220 000 employees, and its economic power, based on its position as number one in purchasing power among all Japanese companies, NTT was able to resist MPT's attempt to break it up for 12 years. In the face of difficulties it faced for regulating NTT by divestiture, MPT started in the last several years to use regulatory safeguards as an alternative, and perhaps more effective, tool.

Unique market structure

Japan had a unique telecommunications market structure which was based on the line-of-business restrictions on NTT and KDD. From the outset, NTT could not enter the international market and KDD was limited to providing international telecommunication services. Therefore, unlike many other OECD countries, there have been two incumbents in the Japanese telecommunications market, one for domestic and one for international. Furthermore, for a long time there was no cross-competition between domestic long distance carriers and international carriers. In fact, there has been no company operating both domestic and international services until 1997. In addition, competition was developed differently in the long distance and the international markets. In the long distance market, new common carriers

(NCCs)[12] have used least-cost routing chips (LCR) to entice customers from NTT, but in the long distance market, NCCs have made large investments to advertise their carrier identification codes to compete with KDD. As a result, consumers do not need to use carrier identification code for long distance services but need it for international services (see Section 2.2.5).

Consumer protection vs. industry promotion

MPT has authority both as a regulator and a policy maker in the telecommunications sector. As a result, unlike many other regulatory bodies in the OECD Member countries that solely aim to protect consumer benefits, MPT is responsible for consumer protection as well as industry promotion in the telecommunications sector. For instance, the "second info-communications reform" in 1995 had two goals: promotion *of users' benefits* and *revitalisation of industry*[13]. Considering the fact that the regulatory body's independence can be effectively ensured only when it distances itself from interested parties, there is concern that MPT's industry promotion function may have negative impacts on its regulatory function. In fact, it seems that previously MPT put more emphasis on the role of industry promotion by protecting carriers' interest through the recently abolished "supply-demand" provision and "tariff approval system".

NTT's R&D activities are one good example of the importance of industry promotion in Japan's telecommunications regime. The NTT Law stipulates that NTT should conduct research related to telecommunication technologies. Since its establishment in 1952, NTT's R&D has been regarded as a national asset and has played a vital role in the promotion of the competitiveness of the so-called NTT family companies, namely NEC, Hitachi, Oki and Fujitsu. However, NTT's role tends to be decreasing due to the rapid expansion of R&D activities on Internet and multimedia technologies in the telecommunications sector.

Foreign pressure

Since the early 1980s, Japan's trading partners, mainly the United States, have made the telecommunications sector the major target of pressure for open markets.[14] The annual Japan-US bilateral exchanges have increased pressure to liberalise Japan's telecommunications market. In 1998, when the United States submitted two proposals regarding deregulation to the Japanese government, telecommunications deregulation was the central issue. In recent years, the EU has also pushed for more open markets, and the deregulation proposal made to Japan in October 1998 also targets the telecommunications sector as the main area for deregulation. (See Section 2.2.7.)

It should be noted that foreign pressure does not necessarily only represent the interests of foreign companies, but may also include those of potential or new domestic carriers. Since it is uncommon in Japan for a single company to file a complaint to the government, many companies, including Japanese domestic companies, have tried to use the US Chamber of Commerce or the European Business Council, with *Keidanren*, to represent their interests to the government.

It is noteworthy that some significant changes in Japan's telecommunications regulatory regime resulted from their WTO commitments in the context of the agreement on basic telecommunications services, which was signed on 15 February 1997 and came into force on 5 February 1998. (See Section 2.2.7.) It seems that the role of multilateral negotiation as a force to push further reform in the Japanese telecommunications market will be strengthened as increased globalisation of telecommunications services occurs.

1.2.4 Telecommunications market and participants

Until recently, Japan had very distinctive telecommunications market structure based on line-of-business restrictions on NTT and KDD. After abolishing these restrictions by amending the NTT Law and abolishing the KDD Law, the market structure has significantly changed. Previously, in the national long distance market, there were NTT and three NCCs -- DDI (Daini DenDen), Japan Telecom and Teleway Japan. In the international market, the participants were KDD and two NCCs, ITJ (International Telecom Japan) and IDC (International Digital Communications).

However, abandoning line-of-business restrictions not only allows NTT and KDD to expand their business coverage, but changes the whole competition environment by eliminating the separation between national long distance and international markets. In fact, the most significant change in the Japanese telecommunications market is the possibility for carriers to provide an integrated telecommunication service or a "one-stop service" to customers. In addition to NTT's entry into international markets and KDD's into national long distance market through its acquisition of Teleway Japan, other NCCs are improving their ability to provide one-stop service to customers through strategic alliances and mergers. For instance, Japan Telecom has merged with ITJ, and DDI has decided to provide international services through a tie-up with the Canadian carrier Teleglobe.

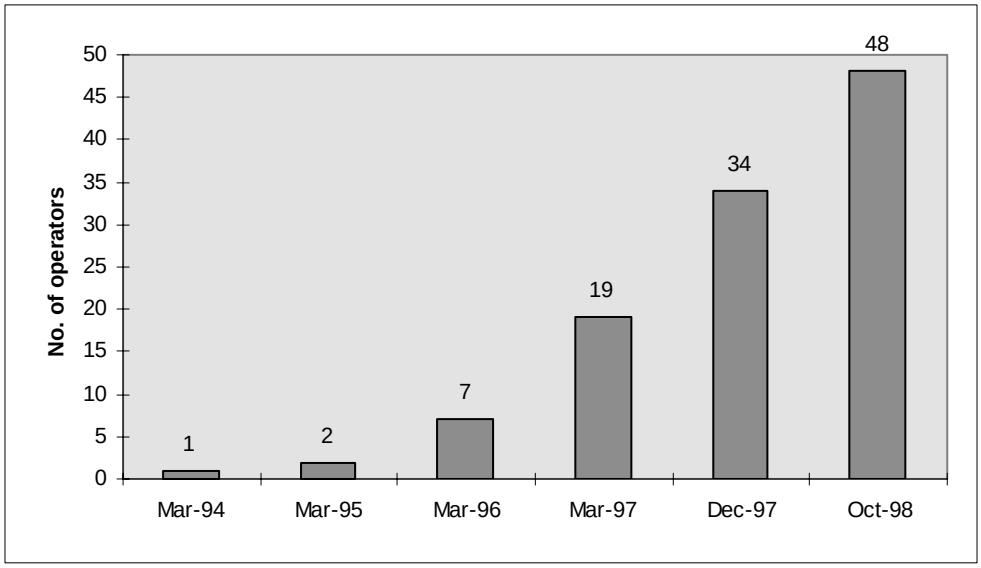
In the mobile market, in addition to NTT DoCoMo, there are five or six cellular and PHS carriers in each market block.[15] Major players in the mobile market are DDI Cellular, IDO, TUKA, Digital Phone, Digital TUKA, DDI Pocket and ASTEL. Currently, cellular operators provide both analogue services based on TACS technology and digital service based on PDC technology. Since the PDC system was developed by NTT DoCoMo, some carriers are trying to use digital technologies such as CDMA (code division multiple access). In fact, DDI Cellular and IDO have entered into a strategic alliance to introduce a nation-wide "cdmaOne" service and three of their regional companies began services in July 1998. In the PHS market, although subscribers surpassed 7 million as of September 1997, the total number of subscribers has been declining since October 1997 as customers move from PHS to cellular networks. In addition, many PHS companies are losing money because of severe price competition. For example, liabilities of NTT Personal Group exceed its assets. As a result, NTT decided to transfer NTT Personal Group's PHS business to NTT DoCoMo in order to improve the PHS business operation.

In the market for local fixed telephony services, as of 31 March 1998, NTT had a 99.5 % market share, as measured by the percentage of access lines (and 98 % in terms of revenue). Because of NTT's dominance, other carriers have to use NTT's local loop to complete their services. Recent indications of potential changes may have implications for NTT's dominance in the local telecommunications market. For instance, local fixed optical fibre networks are being constructed by new entrants, such as electrical power companies, which can use their power cables as rights of way for optical fibre cables. Currently, ten electric utility companies are providing telecommunications services such as leased lines and integrated services digital network (ISDN). Among them, companies like TTNet in Tokyo and QTNet in Kyusyu have entered or plan to enter the local voice telephony market. In fact, TTNet is one of the local telecommunications companies offering cheaper local calls than NTT. Owing to its relatively cheaper price for local calls (9 yen for three minutes, or 1 yen cheaper than NTT), TTNet obtained 1.4 million subscribers in just six months after launching its business in January 1998. QTNet plans to offer local voice telephony services from April 1999.

As a result of earlier regulatory constraints on CATV, Japan's penetration rate for CATV service is very low (11.32 % of households at the end of 1996) as compared with other OECD countries. However, the growth rate of CATV penetration (37.5 % between 1995 and 1996) is much higher than the OECD average (7.8 %).[16] In addition, while foreign ownership restrictions on CATV prevent foreign

entities from owning more than 33 % of CATV shares, since February 1998 these restrictions are not applied to CATV companies with Type 1 carrier licenses.[17] By October 1998, there were 48 CATV companies with a Type 1 carrier license. Although the number of CATV companies that hold a Type 1 license is increasing rapidly (Figure 1), only five companies currently have interconnection agreements with NTT and only two provide voice telephony services using their CATV networks. Titus Communications Inc. began to provide voice telephony services via cable used for television services in June 1997 and J-COM Tokyo Inc. began a similar service in July 1997. J-COM currently charges 8.5 yen per three minutes and its charges for calls within its network is 5 yen per 3 minutes. Despite the weak presence of CATV companies in the telecommunications market, their recent rapid growth rate suggests that they are likely to be a source of local loop competition against NTT East and West.

Figure 1. **Number of CATV operators with a Type 1 carrier license**



Source: MPT.

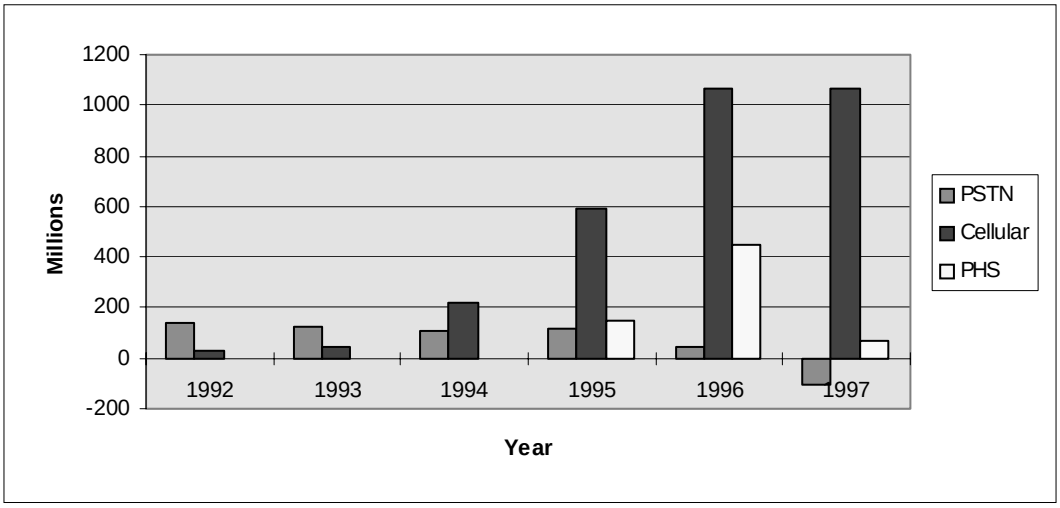
In the long-distance market, as of 31 March 1998, NTT had a 59.4 % market share in terms of revenue. In the international market, as of 31 March 1998, KDD had a 63.7 % market share in terms of revenue.

In the mobile market, as of March 31 1998, NTT DoCoMo had a 57 % market share in cellular phone service and NTT Personal had a 28.3 % market share of PHS in terms of subscriber numbers. Japan's mobile market is doubling in size each year, thanks to strong competition, which has led to significant price cuts. Since the introduction of the COMA system in 1994, the number of mobile subscribers has increased significantly. In 1993, mobile subscribers numbered 2.13 million; by 1998 there were 39.21 million. In 1995, Japan ranked eleventh in terms of mobile communication subscribers per 100 inhabitants in the OECD area, but by 1997 it had risen to fourth place. In terms of revenue, mobile services accounted for 11.46 % of total telecommunications revenue in 1993; its share tripled in 1997 to 39.67 %.

The explosive growth of mobile communication in Japan has had implications for fixed telecommunication services through substitution effects (Figure 2). The relatively high cost of joining the fixed network as compared to a mobile subscription seems to be attracting a growing number of users who only subscribe to mobile services. In Japan, subscribers to the fixed network buy a "right of connection"

rather than a connection to a specific location. For this service they pay the highest initial connection fee (72 000 yen) in any OECD country. However, they can change location without paying a further connection fee, leave and rejoin the network, and resell their "right of connection". As a result of this high initial connection charge, the very low initial fee to join a mobile communication network, together with low user packages, is very attractive for users such as university students and new entrants to the labour market[18]. Since 1994, growth of numbers of mobile subscribers has surpassed that of PSTN (public switched telephone network) subscribers. More importantly, in 1997 the number of PSTN subscribers started to decrease.

Figure 2. **Number of customers for each service (in million)**



Source: MPT and NTT.

At the same time as the number of PSTN subscribers are decreasing, a large number of existing PSTN customers are transferring to ISDN, largely due to the lack of initial connection charge, as well as the rapid growth of Internet use. As of end of October 1998, there were 3 250 535 basic interface circuits in use in Japan, up 79.3 % from the previous year, and 40 707 primary rate interface circuits, up 40.0 %.[19] In addition, three international carriers provide international ISDN services in Japan. As the end of fiscal 1996, there were 10 647 circuits; these are mostly used by businesses for international communications, such as video conferencing.

For high-speed digital transmission, NTT and 16 other long-distance and regional carriers offer leased line services. As of September 1997, 163 477 leased lined were in use, up 67.7 % from the previous year. The market share (14.1 %) of non-NTT carriers was down by 3.8 % from the previous year. For international leased lines, at the end of fiscal 1996, three international carriers provided 1 771 lines, up 4.7 % from the previous year.[20] It is expected that the demand for international leased lines will increase rapidly owing to the abolition of restrictions on international simple resale (ISR) services in December 1997.

As in many other OECD countries, use of the Internet has grown very rapidly in Japan. Between January 1998 and July 1998, Internet hosts per 1 000 inhabitants increased from 9.3 to 10.8 (by 15.7 %).[21] The number of access points for Internet dial-up IP connections had reached about 4 600 at the end of January 1998. At of end of February 1998, Internet services were provided by 2 561 Type 2 carriers (*i.e.* approximately 40 % of Type 2 carriers) and 15 Type 1 carriers.[22]

Table 3. **Major participants in Japan's telecommunications market as of 31 March 1998**

(Percentage share)

	Local	Long distance	International	Cellular	PHS	Note
NTT/NTT DoCoMo	A 98.0	A 59.4	P	A 57.0	A 28.3	Cellular and PHS services are provided by NTT DoCoMo.
KDD/Teleway Japan	P	A 7.6	A 63.7			KDD plans to enter the mobile market through IMT 2000.
JT/Digital Phone		A 15.1	A	A 7.5		JT is a major shareholder of 3 Digital phone.
DDI/ DDI Cellular/ DDI Pocket		A 16.9	A	A 13.7	A 51.8	DDI entered into a strategic alliance with Teleglobe in order to provide international voice telephony services using ISR.
IDC			A			
Digital TUKA				A 5.6		JT is a major shareholder of 6 Digital TUKA companies.
TUKA				A 7.4		DDI is a major shareholder of TUKA Cellular Tokyo and Tokai which are in the Kanto and Tokai areas.
IDO				A 8.8		
TTNet	A	A 1.0				TTNet has a cross-investment alliance with KDD.
ASTEL					A 19.8	Regional NCCs, JT, Teleway and KDD are major share holders of ASTEL

Notes: A = Currently active
P = Planning to enter.
All figures are based on the revenues as of 31 March 1998.

Source: MPT.

Table 4. **Number of Type 1 telecommunications carriers in Japan**
(Fiscal year)

	84	85	86	87	88	89	90	91	92	93	94	95	96	97
Type 1 carriers	2	7	12	36	44	62	68	70	80	86	111	126	138	153
NTT	1	1	1	1	1	1	1	1	1	1	1	1	1	1
NTT DoCoMo Companies									1	9	9	9	9	9
KDD	1	1	1	1	1	1	1	1	1	1	1	1	1	1
New Type 1 carriers		5	10	34	42	60	66	68	77	75	100	115	127	142
Long distance/International		3	3	5	5	5	5	5	5	5	5	5	5	6
Regional			3	4	4	7	7	7	8	10	11	16	28	47
Satellite		2	2	2	2	2	2	3	3	2	2	4	4	5
Mobile communications			2	23	31	46	52	53	61	58	82	90	90	84
Cellular phone				2	4	8	8	9	15	15	17	21	21	21
Radio paging			2	20	26	33	36	36	36	31	31	31	31	31
PHS											23	28	28	28
Convenience radio phone						2	4	4	7	7	7	6	6	
Ship telephone				1	1	2	3	3	2	2	1			
Airport radio telephone										2	2	2	2	2
Data communications						1	1	1	1	1	1	2	2	2

Source: MPT.

Table 5. **A Synopsis of telecommunication regulation in Japan**

Category	Regulatory restrictions	Notes
Entry regulations		
Type 1 carrier	Entry on the basis of permission	The mobile operator needs an individual license in addition to Type 1 permission.
Special Type 2 carrier	Entry on the basis of registration	Registration can be refused by the Minister in the light of a firm's lack of financial and technical capability.
General Type 2 Carrier	Entry on the basis of notification	
CATV	Entry on the basis of permission	Notification for less than 500 subscribers.
Broadcasting	Entry on the basis of individual licensing	
Line-of-business restrictions	No line-of-business restrictions but NTT is not allowed to enter into the CATV service market	
Foreign ownership restrictions	No foreign ownership restrictions except for NTT (less than 20%)	The foreign ownership restrictions on KDD were lifted after the KDD Law was abolished.

Price controls Type 1 carrier Special Type 2 carrier General Type 2 carrier CATV operator	Notification system and price-cap regulation Notification system No regulation Notification system	Price-cap regulation only applies to NTT local basic services.
Interconnection controls Prices Dispute resolution Scope	Type 1 carriers with "designated facilities" need Minister's approval for terms and conditions Parties can ask for arbitration by the Minister All Type 1 carriers are required to provide interconnection.	Separate accounting is required for "designated facilities". Parties can file a lawsuit within 3 months after Minister's decision when they are not satisfied with the result of arbitration.
Spectrum allocation	Licensing is used for spectrum allocation	No specific spectrum allocation method such as auction or competitive test is adopted for spectrum allocation.
Numbering policy	Number portability and pre-carrier selection are not yet implemented	
Universal service	NTT is obliged to offer universal service without financial compensation from the government or any other carriers	

2. Regulatory structures and their reform

2.1. Regulatory institutions and processes

In Japan, the Ministry of Posts and Telecommunications is responsible for telecommunications policy and regulation. It is also responsible for broadcasting policy and for operating postal services, postal savings services and postal life insurance services. Unlike the situation in many other OECD countries, the same ministry has both a policy and a regulatory role. Within MPT, the Telecommunications Bureau is responsible for telecommunications regulation and the Broadcasting Bureau is responsible for broadcasting regulation. In addition, the Communications Bureau is responsible for longer-term policy-oriented issues such as the realisation of the info-communication society. MPT is one of the few regulators in OECD Member countries with the authority to supervise both the broadcasting (including content regulation) and telecommunications markets.

Like many other ministries in Japan, MPT has a policy council ("*shingikai*"), the Telecommunications Policy Council (the Council), which is in charge of developing telecommunications policy. Since the Council plays an advisory role, the Minister is not bound by the Council's decision. Nevertheless, in most cases the Council's recommendations have been adopted as MPT policy. While the Council has the authority to set its agenda freely without necessarily responding to the Minister's request, in practice, the Council set its agenda responding to the Minister's request. The members of the Council are appointed by the Minister from academia, industry, and consumer interest groups. As of October 1998, the Council had 22 members with a two-year term of service. In practice, before the Minister makes a policy decision, the Council discusses the issues (*e.g.* the break-up of NTT, an interconnection accounting system, etc.) and makes recommendations to the Minister.[23]

Although it is not a problem unique to MPT, the Council has been criticised for its compromising approach and rather lengthy procedures (see the background report on Enhancing market openness through regulatory reform, Box 2 for general information on advisory policy councils in Japan). Since the Council is composed of representatives of different interest groups, it is extremely difficult to obtain a clear-cut position on specific issues. The problem is exacerbated when the Council takes too much time to decide certain issues. The tendency to seek a compromise, combined with the tendency towards lengthy decision-making processes, tends to operate in favour of dominant market players who have an interest in maintaining the *status quo*.

In addition to the Council, study groups ("*kenkyukai*") have played an important role in the policy-making process. MPT has many study groups composed of experts on specific issues, such as number portability, carrier pre-selection, interconnection accounting systems, etc. Study groups are set up by the Ministry or the Council in order to draft papers providing professional knowledge on specific policy issues to the Minister or the Council.

In Japan, the MPT is one of the leading ministries in the use of the so-called "green paper" approach in the policy-making process. This involves soliciting public comment when establishing new regulations that may have a significant influence on interested parties. For example, it asked for public comment on issues such as the interconnection accounting system and the break-up of NTT. MPT's green paper approach has generally been highly appreciated by many interested parties and clearly increases the transparency of the policy-making process.

In addition to MPT, the Fair Trade Commission (the FTC) has jurisdiction in the telecommunications sector. The FTC's authority is based on the Anti-monopoly Act (AMA). In telecommunications, there is no formal exemption from the AMA, so the FTC and the Ministry share jurisdiction. However, the FTC's involvement has been very limited (see Section 2.2.8).

In June 1998, 'the Basic Law for the Reorganisation of the Central Government Ministries and Agencies' was enacted. According to this law, MPT is to be integrated into a new Ministry of General Affairs along with the Ministry of General Affairs, the Ministry of Home Affairs and the FTC by 2003 (the target year for restructuring is, however, 2001). After the restructuring, although MPT will have to reduce the number of communications-related bureaux from the present three to two, it will retain all of its functions as regards telecommunications and broadcasting policy and regulation.

The restructuring plan has raised concerns relating to telecommunication policy and regulation (see the background report on Government capacities to ensure high quality regulation, for a general assessment of government downsizing in Japan). First, the number of different functions of the new Ministry of General Affairs will arguably be too large for a single ministry. This could result in delay on key issues, a problem of particular concern in a sector such as telecommunications where technology and services are changing rapidly. Moreover, given the wide range of areas under the responsibility of the ministry, some issues may receive insufficient attention at ministerial level.

Second, it does not seem that the integration of three ministries will facilitate the government's objective of building professional expertise within the Ministry, particularly in light of the fact that, in Japan, ministry personnel are shifted regularly every two years. In addition, rapid market and structural developments require expertise in handling the transition from monopolistic market structures to competition. Third, although the FTC is to implement the AMA independently regardless of the restructuring, the appearance of conflict because the FTC and MPT will be under the same Minister could introduce uncertainty in the market.

The rapidly changing communications market requires communications regulators to respond quickly to changes in order to take full advantage of technological developments and of creative business activities that benefit consumers. For this reason, the regulator needs to be equipped with professional knowledge and mechanisms that ensure timely action. The suggested institutional changes do not take account of this requirement. Therefore, the current restructuring plan should be reconsidered, so as to ensure an institutional structure which can provide an effective regulatory and policy regime for the Japanese communications market.

2.2. Regulations and related policy instruments in the telecommunications sector

2.2.1 Regulation of entry and service provision

Licensing regime

According to the TBL, telecommunications operators are classified as Type 1 telecommunications operators when they establish and operate network infrastructures, and as Type 2 telecommunications operators when they lease infrastructure resources. Type 2 telecommunications operators are further divided into special Type 2 and general Type 2 telecommunications operators (Table 6).

Table 6. **Classification of telecommunications services**

Type of business	Type 1	Special Type 2	General Type 2
Definition	Business that provides telecommunications services by establishing its own telecommunications circuits and facilities	Business that provides voice telephony services for an unspecified number of subscribers through the interconnection of both ends of leased circuits with public switched networks.	Business other than described for special Type 2 telecommunications business
Condition for entry	Permission	Registration	Notification

The amendments to the TBL in June 1997 resulted in several important competition-promoting changes in the licensing regime. Previously, the TBL's so-called "supply-demand" provision allowed MPT to prohibit, the entry of new companies if it thought that existing demand in the service areas did not warrant new suppliers. Although MPT still has authority to block market entry through the examination standard which is based on "general public interest" provisions[24] in the TBL (see box 4), the abolition of the "supply-demand" provisions has clearly increased transparency in Japan's licensing procedures. In addition, in June 1998, Japan abolished the so-called "100 destination rules", which prohibited international Type 1 carriers from entering into agreements with foreign carrier to terminate international traffic until a Type 1 carrier had established at least 100 correspondent agreements for its service.

While the abolition of the so-called "supply-demand" provisions has clearly enhanced transparency in the Japanese licensing regime, there is a need to revise regulations on licensing in order to obtain more transparency. MPT uses the examination standards[25] when it determines whether Type 1 business applicants meet the entry requirement standards in the TBL. These examination standards do not provide clear-cut information to applicants on the minimum requirements to receive licenses. In effect, this results in a consultation process whereby new entrants determine whether or not an application, once made, would be approved by MPT. There is a possibility that this unofficial consulting period can cause

delays in launching a new business in spite of the standard processing period of 1-2 months guaranteed under the Administrative Law for handling applications. Such a process also tends to reduce transparency further. To avoid such problems, except in the case of spectrum allocation, which requires individual licensing system due to its scarcity, many OECD countries are lowering entry barriers to the telecommunications market. For example, the Netherlands has introduced a class licensing system whereby all applicants that meet clearly stated criteria attain market entry, and Denmark requires no official procedure to enter the market.

In the meantime, considering the large number of carriers in the Type 1 market, it seems that there is no more reason to maintain severe entry restriction in the marketplace.

In addition, Type 1 carrier applicants are required to specify in their application the category of telecommunications services (Table 7) and their proposed service coverage, to supply a business plan, and to provide information on progress on the implementation of the business plan supplied. Type 1 carriers are not allowed to change the category of telecommunications services and service coverage without the permission of the Minister. Thus, to expand network and service coverage from local to long distance services, a company is subject to MPT's approval.

Box 4. **Permission for a standard Type 1 carrier**

- *Adequate* financial basis and technical capability to undertake telecommunications business
- *Reliable* and *feasible* business plan
- Entry into the telecommunications business should be *appropriate* for the sound development of telecommunications

Table 7. **Categories of telecommunications services offered by Type 1 carriers**

Type of service	Category
Voice transmission	A telecommunications service other than a data transmission service using telecommunications facilities with switching and transmission functions principally in the 4 Khz band (voice and other sounds); for communications with others
Data transmission	A telecommunications service solely for communicating using telecommunications facilities with switching and transmission functions for data and images; for communications with others
Leased circuit	A telecommunications service that allows a specific (legal or physical) person exclusive use of telecommunications facilities

Note: Type 1 applicants should provide the classification (*e.g.* domestic/international) and the service coverage for each type of service they apply for.

Based on the Radio Law, mobile operators with a Type 1 license also need separate licenses in order to launch their services (See Section 2.2.5).

In terms of special Type 2 carriers, even though companies can enter the market through registration, their registration can be refused if the Minister decides that the applicant does not have an adequate financial basis and the technical capability for undertaking a telecommunications business properly. These standards for refusal are very general. As a result, even special Type 2 carriers are subject to MPT's approval in spite of the term "registration" which, in other countries, normally means that companies can enter the market with very few formalities. However, in practice, no application has been rejected so far.

According to MPT, it is necessary to distinguish Type 1 and Type 2 carriers because the former has significant "public interest characteristics". However, the somewhat artificial separation between Type 1 and Type 2 carriers imposes a number of unnecessary burdens on carriers. The need for rights of way and huge up-front investment are the major reasons mentioned by MPT for regulating Type 1 carriers more heavily than Type 2 carriers. However, considering the fact that fragmented rights-of-way regulation restricts Type 1 carriers from accessing public and private lands even after possession of a Type 1 carrier license, and the fact that there are many different Type 1 operators whose initial investments vary significantly, such reasons provide few grounds for maintaining a distinction between Type 1 and Type 2 carriers. Furthermore, there is a possibility that heavy regulation on Type 1 carriers may hamper the development of infrastructure competition by discouraging possible new entrants to the telecommunications infrastructure market.

Because of the strict regulatory distinction between Type 1 and Type 2 business, it is not allowed to route both domestic and international traffic via combinations of owned and leased network facilities. Therefore, a single company cannot undertake both Type 1 and Type 2 business in an integrated way, even if the company holds both a Type 1 and a Type 2 permit. In practice, this causes a company to establish a different firm to provide each of the services. For example, Worldcom Japan has two different legal entities, one for Type 1 services and the other for Type 2 services. The need to establish a different entity to provide another type of service raises a couple of issues. First, it means an additional cost because the company will need to hire an additional chief telecommunications engineer (a requirement for Type 1 and special Type 2 carriers under Article 44 of the TBL). Second, establishing a new entity requires additional paperwork, including administrative and other company reporting requirements. It also disadvantages new entrants, as they often only construct parts of their infrastructure and relies for the remainder on leasing.

Since it is essential for telecommunications operators to use all possible means to provide a wide range of services to meet changing consumer demand, they should be allowed to provide all kinds of services without restrictions. Japan should abandon the current entry scheme and establish a simple and transparent scheme, preferably based on general authorisation, in order to ensure free and fair competition, which is essential to maximise consumer benefits.

Rights of way

According to the TBL, Type 1 carriers are entitled to rights of way to public water and private land. Nonetheless, due to the fragmented regulations on rights of way, new carriers have experienced difficulties in establishing their own networks even after receiving Type 1 carrier licenses. Since there are many laws (*e.g.* the Road Law, the National Asset Law and the Local Autonomy Law) with different jurisdiction over rights of way, carriers are required to receive separate permission from a number of government bodies. The number of government bodies which participated in the study group on rights of way clearly shows how much rights of way regulations are fragmented. In fact, 12 government bodies[26] were participating in the study group on rights of way. New Type 1 entrants have claimed that the current situation gives an unfair advantage to the incumbent and prevents them from infrastructure competition.

Since new entrants face difficulties in constructing new infrastructure, even after they have received Type 1 licenses, regulations on facility sharing (such as sharing of ducts) become even more important for ensuring that new entrants have fair access to end users. If facility sharing is effective, new entrants can construct new networks relatively cheaply and rapidly. According to the TBL, Type 1 carriers and special Type 2 carriers can request arbitration if they fail to reach an agreement for facility sharing. If a party is not satisfied with the result of the arbitration by the Minister, it can file a suit within three

months of the decision. In principle, then, any Type 1 or special Type 2 carrier can request facility sharing with NTT and other utility-based Type 1 carriers[27] that own duct systems. In practice, when interconnection occurs at an NTT building, NTT should provide facility sharing for other carriers using NTT's conduits, ducts and poles from the point of interface to the first manhole, according to Article 14 of the "Agreement concerning Interconnection to Designated Telecommunications Facilities". This exception aside, the use of the facilities of NTT and other utility-based Type 1 carriers is subject to commercial negotiation and ultimately to ministerial authorisation.

However, many new entrants have difficulty reaching facility-sharing agreements with NTT and utility-based Type 1 carriers because of no standardised charges[28] and no limit on negotiation periods.[29] Because of these difficulties, some new entrants have argued for mandatory facility sharing, but the counter-argument made is that this would result in "free riding".

In the face of criticism about the fragmented regulations on rights of way, the Japanese government formed a study group under the Ministry of Foreign Affairs. It made a report on present conditions of access to poles, conduits, ducts and rights of way on 25 December 1998. Instead of providing new solutions on the rights-of-way problem, the report suggested improvement of current procedures to ensure timely, non-discriminatory and transparent access to the resources. Since there are so many regulations on rights of way, it is recommended that guidelines be published to access rights of way for new entrants in order to help them acquire the necessary information.

Line-of-business and ownership restrictions

All line-of-business restrictions in the telecommunications market have been removed as a result of the revision of the NTT Law in 1997 and the abolition of the KDD Law in 1998. The legal barrier preventing NTT and KDD from entering each other's market has been lifted. In addition, with the exception of NTT, companies can offer unrestricted telecommunications and CATV services.[30] However, in the case of the new IMT 2000 mobile services, "the basic guideline for introducing the third generation mobile communications systems", announced by MPT in July 1998, imposes line-of-business restrictions on operators who own local telecommunications networks by prohibiting them from providing IMT 2000 services by themselves.

With the exception of NTT, no ownership restrictions remain in the Japanese telecommunications market. As for NTT, foreigners (including foreign governments and their representative, and foreign judicial persons or associations) are not allowed, directly or indirectly, to hold 20 % or more of its shares. In addition, the NTT Law mandates that the government must hold one-third or more of total outstanding shares, and NTT has to obtain authorisation from the Minister when it issues new shares, convertible debentures or debentures with pre-emptive rights on new shares. As a matter of principle, it would be better to remove all ownership restrictions on NTT. The strong government ownership of NTT can raise problems of conflict of interest, as the government acts both as a shareholder and a regulator. In the longer term, as competition develops, MPT should abolish the NTT Law and treat NTT like any other company.

2.2.2 Regulation of interconnection

The most important regulatory safeguard to ensure fair competition is the establishment of a fair and transparent interconnection framework. Indeed, such a fair and transparent interconnection scheme is vital if there is no alternative local loop to that of the incumbent. Since NTT has a 99.5% market share, as measured by the percentage of access lines in the local market, it is essential for other carriers to interconnect with NTT's local loop in order to terminate their calls. Thus, access to NTT's local loop is a cornerstone for the promotion of market competition.

According to the TBL, all Type 1 carriers are obliged to provide interconnection when there is a request from other carriers unless such provision is prevented by technical or significant economic obstacles.[31] In addition, carriers are expected to obtain the Minister's authorisation after reaching agreement. Considering that the TBL imposes special obligation on a "designated telecommunications facility" and ensures arbitration procedure when parties do not reach to agreement, such authorisation appears unnecessary. Indeed, many OECD countries regard an interconnection agreement as a purely commercial matter except in those cases where the incumbent is involved as an interested party.

To ensure interconnection to the incumbent's network, the Minister can determine that certain facilities of Type 1 carriers are treated as a "designated telecommunications facility". Such a designation is based on the number of telecommunications lines in each specific prefecture in which fair and transparent interconnection needs to be assured in order to "promote benefits to users and rationally develop telecommunications". If the Minister designates a Type 1 carrier's facility, the Type 1 carrier must establish a standard interconnection agreement, which is subject to authorisation by the Minister. A standard interconnection agreement should provide fair, transparent and non-discriminatory terms and conditions with fair cost-oriented rates for interconnection to all carriers.

In practice, NTT's local loop[32] is the only "designated telecommunications facility" in Japan and "NTT's Articles for Interconnection Agreements" for "designated telecommunications facilities" were approved by the Minister as a standard interconnection agreement in March 1998. In its standard interconnection agreement, NTT provides six standard points of interconnection in its network architecture.[33] In addition, on the basis of the "Basic Rules for Interconnection", NTT provides unbundled network elements[34] to other carriers and charges separately for each. In practice, most interconnection has traditionally been carried out with transit exchanges (ZC), because long-distance carriers had insufficiently developed facilities to set up POIs (points of interface) within the region. Since 1996, local exchange (GC) interconnection has been provided for regional and long distance carriers. This enables companies such as TTNet and Titus to enter the local residential market and to compete directly with NTT.

In order to ensure fair and transparent interconnection, the TBL also requires a Type 1 carrier with "designated telecommunications facilities" to publish the standard interconnection agreement and to maintain accounting separation relating to interconnection with "designated telecommunications facilities". In addition, the TBL requires an annual recalculation of interconnection charges based on the accounting result of the "designated telecommunications facilities".

A substitute for interconnection is the "consignment of business activities", which is based on an agreement between parties to handle their traffic. The major difference between interconnection and "consignment of business activities" is that in case of the latter carriers are not able to ask for arbitration when they cannot reach an agreement. Business practice has led some carriers to use "consignment of business activities" rather than interconnection; for example, international carriers are entering into "consignment of business activities" with NTT DoCoMo in order to terminate incoming international phone calls. However, it seems that this "consignment of business activities" will soon be substituted by an interconnection agreement, because there is no incentive for international carriers to maintain "consignment of business activities" that do not provide the possibility to request arbitration.

Since 1994, the price of NTT's access charges has dropped significantly (Table 8). For example, from 1994 to 1998, charges for tandem switch interconnection have been reduced by 40%. In addition, a per second charge scheme was introduced in 1996.

Table 8. **NTT's interconnection charge**

Type	FY 1998	FY 1997	Percentage change
GC connection: local exchange (telephone)	0.99 /call 0.0268/sec. 5.81/3minutes.	0.99/call 0.0289/sec. 6.19/3minutes	0.0 % -7.2 % -6.1 %
ZC connection: transit exchange (telephone)	1.27/call 0.0595/sec. 11.98/3 minutes	1.28/call 0.0647/sec. 12.93/3minutes	-0.8% -8.0 % -7.3 %
GC connection: local exchange (ISDN)	2.31/call 0.052/sec. 11.67/3 minutes	3.38/ call 0.086/sec. 18.86/3 minutes	-31.6 % -39.5 % -38.1 %
ZC connection: transit exchange (ISDN)	2.59/call 0.0847/sec. 17.84/3 minutes	3.67/call 0.1218/sec. 25.59/3 minutes	-29.4 % -30.5 % -30.3 %

Note: The charge for three minutes is the charge that would be levied under a three-minute charging system and differs from the actual cost for a three-minute call. The three-minute charge system was introduced in fiscal 1996. Under this system a three-minute period is counted as a charge unit.

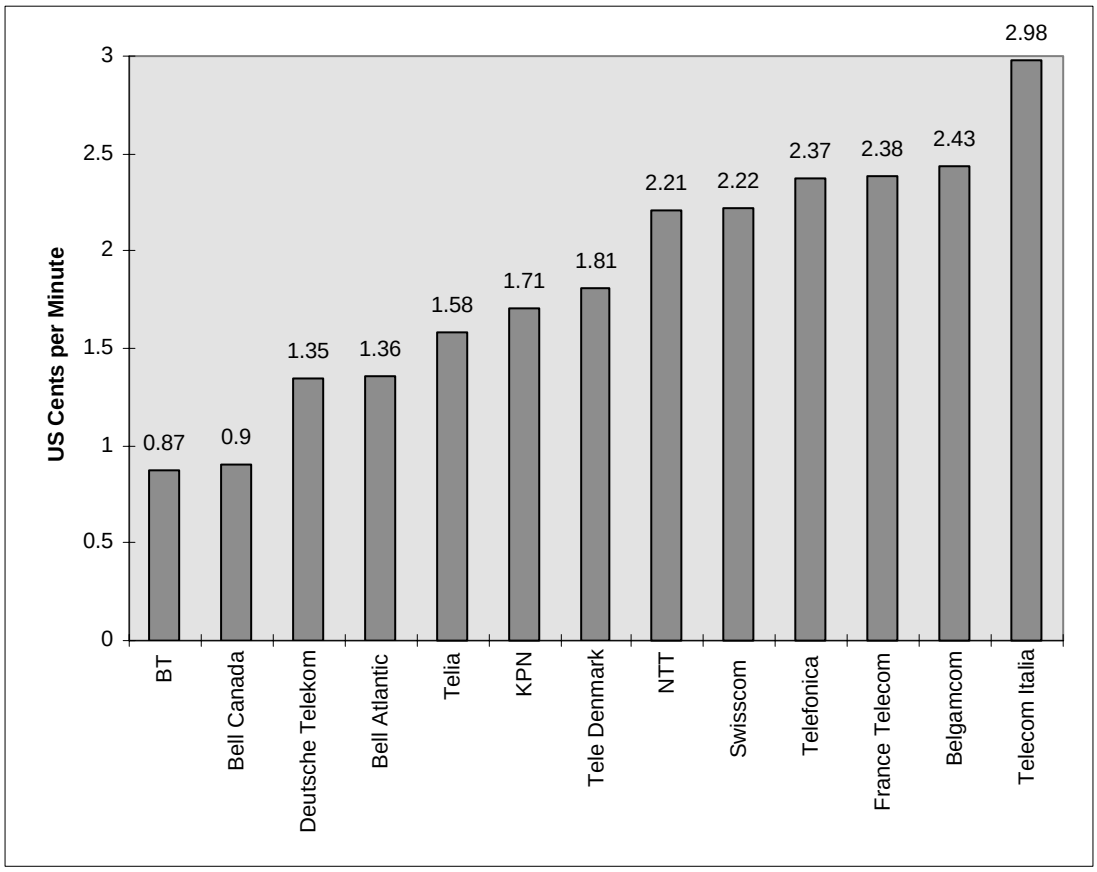
Source: MPT News March 1998.

However, NTT's interconnection charge is still relatively high compared with other major carriers in the OECD region (Figure 3). Indeed, foreign trading partners, such as the European Union and the United States have raised high interconnection charges as a trade issue, arguing that high interconnection charges are a *de facto* market barrier that prevents foreign carriers from entering the Japanese market. In this regard, both the European Union and the United States have urged that Japan introduce an interconnection framework based on LRIC methodology, using forward-looking rather than historical costs. Currently, Japan is using an activity based cost accounting (ABC) system, essentially based on NTT's historical costs.[35] In its joint (with the United States) status report on deregulation, Japan announced that it would submit a bill to the Diet in 2000 in order to introduce the long-run incremental cost accounting (LRIC) methodology. It is recommended that efforts should be made to accelerate the implementation of LRIC to ensure more cost-oriented interconnection charges as soon as possible.

In principle, NTT's interconnection charges on "designated telecommunications facilities" are composed of access charges[36] and network modification charges[37] and both charges are standardised by "NTT's Articles for Interconnection Agreement". Therefore, carriers can access NTT's "designated telecommunications facilities" without the need for individual negotiations. However, charges on some unbundled elements are unreasonably high and need to be revised. For instance, despite the fact that NTT charges 50 to 120 yen per directory services inquiry to its customers, it charges new entrants 191 yen at the wholesale level. This implies either that the wholesale charges are much higher than costs or that NTT cross-subsidises its directory services from its other services. In any cases, this price structure virtually prevents new entrants from providing competitive service. Therefore, NTT's high prices for its unbundled elements should be adjusted in order to ensure fair competition in all possible service areas.

Another very important interconnection issue is the coverage of a "designated telecommunications facility". Currently, only NTT's local loop is a "designated telecommunications facility". However, considering the very fast growth rate for mobile services and the increasing percentage of calls between mobile and fixed telephones in Japan, MPT should consider designating NTT DoCoMo's network as a "designated telecommunications facility".

Figure 3. **Comparison of interconnection charges for call termination (as of July 1998)**



Note: NTT reduced its interconnection charges to 2.07 cents per minute following MPT's approval on 22 January 1999, which retroactively set new interconnection charges from April 1998.

Source: Ovum.

2.2.3 Pricing policy

In spite of its long history of telecommunication liberalisation, Japan's telecommunications prices have been high compared with those of other OECD countries (see Section 3.2), mainly because of the use of a tariff approval scheme for all Type 1 carriers' services until November 1998. Traditionally, NTT's local service charges were set well below cost, and NTT has used long distance service to subsidise losses on local service. This has meant that NTT's long-distance charges were much higher than costs. On the other hand, the prices charged by NCCs for their services had been set at a lower level compared to those of NTT and KDD. (See Figure 4 in Section 3.2.1).

This process has favoured the NCCs by allowing them higher than normal profits that they could enjoy under the full price competition. Users, as a result, have not benefited from the full effects of competition. More price competition would have led to a faster decline in prices in long distance markets (and in other markets as well). A severe weakness of Japan's regulatory framework between 1985 and 1998 has been its inability to allow consumers to reap the full benefit of potential price competition.

As of 1 November 1998, while an approval system has been maintained for local basic telecommunications services, a price notification system is in place. According to the TBL, the Minister will determine whether a specific service is subject to price-cap regulation or the notification system. In practice, only NTT's local basic service will be subject to price-cap regulation. Such price-cap regulation is expected to be implemented after NTT's reorganisation. Until then NTT's local basic service charges are still subject to MPT's approval. All other service prices, including NTT's long distance service prices, will no longer need approval from the Minister. While no pricing regulation is imposed on general Type 2 carriers, special Type 2 carriers are required to submit prices for their services to the Minister before providing those services.

These changes are a significant development on the way to full-fledged competition in which Type 1 carriers can engage in full price competition in the retail market without MPT's supervision. It is expected that the abolition of the approval system will increase benefits to subscribers, both business and residential, by way of more intense price competition among Type 1 carriers. More importantly the change in the form of price regulation may be a turning point in Japan's move toward full-fledged competition. In addition, introducing a notification system and a price cap is a significant step in the right direction to ensure cost-based pricing in the marketplace.

As a result of recent changes, and even before the notification system was adopted, companies such as TTNet reduced local voice telephony prices to 9 yen for three minutes (the first time for over a decade that the local call charge has dropped below 10 yen) and acquired 1.4 million subscribers in only six months after launching its business in January 1998. To what extent the elimination of the price approval system will lead to significant price competition remains to be seen, but many market analysts are expecting significant changes.

While the decision to abolish the tariff approval system is highly commendable, the present regulatory structure still has some problems. First of all, the Minister still has authority to decide whether a specific service is subject to the notification system or price-cap regulation and can alter previous decisions at will. Second, under the new system, MPT still reserves the power to order carriers to revise their charges in certain cases, such as unfair discrimination and anti-competitive pricing. This, in turn, raises the issue of regulatory overlap between the MPT and the FTC, because unfair discrimination and anti-competitive pricing behaviour are in violation of the AMA. Moreover, under the new framework, users and carriers can file complaints and petitions to MPT regarding telecommunications service prices, other conditions, terms of service and their manner of operations. Thus, MPT's power to require price revision can constrict carriers in terms of price flexibility and impose a burdensome process to justify price changes.

In addition, on the basis of the AMA, regulations on anti-competitive behaviour should be undertaken on a more consistent basis across industries. If there is any need to increase capacity to deal with anti-competitive issues such as price fixing and predatory pricing in the telecommunications market, the solution should be to increase the regulatory capability of the FTC rather than to give new regulatory powers to the MPT.

For mobile services, a tariff notification system was introduced in December 1996. Consumers of mobile services have benefited from full-fledged competition. For example, following the introduction of the tariff notification system, NTT DoCoMo eliminated the connection fee (previously 6 000 yen), and reduced monthly subscription charges from 6 800 yen to 4 600 yen and three-minute call charges from 180 yen to 100 yen for digital cellular service. As a result of price competition, the number of mobile customers in Japan increased from 20.9 million in 1996 to 38.3 million by the end of 1997.

In Japan, unlike many other OECD countries, the incumbent is not required to charge uniform tariffs. Since Japan's universal service obligation covers only voice telephony services and does not require the application of a uniform tariff, NTT can differentiate its local service charges across regions if it obtains authorisation from the Minister. In fact, NTT's monthly subscription charges differ on the basis of the total number of access lines in a message area (Table 9). Allowing further geographical re-balancing will prevent a "cream-skimming" effect and will lead to more cost-oriented prices.

Table 9. **NTT's monthly subscription charges**

	400 000 or more access lines	50 000-399 000 access lines	Less than 50 000 access lines
Business	2,600	2,450	2,300
Residential	1,750	1,600	1,450

Source: InfoCom Research Inc., "Information & Communications in Japan 1997".

2.2.4 Quality of service

Although there are no regulations to ensure quality of service in telecommunications, Japan has in general performed well in this area. For example, in terms of faults per 100 lines per year Japan averaged 1.7 (end of 1995) compared to 5.5 for the United States during the same period[38]. As well, since 1992, waiting time for a new connection has been one day or less. In addition, NTT began nation-wide caller identification service in February 1998. To some extent, where price competition does not occur fully, companies use quality of service as a competitive tool. It would, however, be useful to users if carriers were required to publish regularly quality of service data on a comprehensive basis.

In Japan, there is no official institution with the authority to resolve disputes between carriers and consumers. Although 'the Telecommunications Consumer Affairs Office' of MPT is open for complaints on telecommunications services from consumers, it does not have the authority to resolve disputes between carriers and consumers. Considering the fact that consumers do not have the ability to compare many different carriers' quality of service, carriers should be required to publish the number of complaints and results of the resolution of those complaints.

2.2.5 Resource issues

Spectrum allocation

A mobile carrier needs two licenses to undertake its business: one for a Type 1 license based on the TBL and the other a license to establish a radio station based on the Radio Law.[39] According to the Radio Law, spectrum is allocated by first come first served basis. However, neither law has provisions on how to select licensees when there are many applicants for a limited number of potential licenses. In other words, no specific spectrum allocation method (e.g. auction or competitive test) has been in place in order to select mobile licensees when the number of applicants outnumbers the number of licences available.

The lack of an objective selection procedure for spectrum allocation has led to the practice of collective bargaining to formulate consortiums among possible applicants for spectrum acquisition. In reality, applications for spectrum have not outnumbered the number of licensees decided by MPT. Large companies have obviously benefited from this non-transparent procedure, because the TBL requires an "adequate financial basis" as one of the requirements for market entry. Furthermore, licensees have acquired spectrum without paying a fee. Thus, the companies that have been granted mobile licenses have enjoyed not only new business opportunities but also financial benefits.

Although *Keidanren* has recommended that an auction method[40] should be introduced so as to ensure more transparent and fairer spectrum allocation, the study group formed by MPT has argued that the adoption of an auction system may cause financial difficulties for mobile companies, hamper R&D ability, lower consumer benefits, and result in dominance by large companies.

The lack of a transparent and fair method to select licensees when applicants outnumber licences is a significant weakness of the Japanese telecommunications regulatory regime since it does not provide clear guidance for potential entrants on how to prepare to acquire a mobile license. According to MPT's spectrum allocation plan for IMT 2000,[41] if there are more applicants than the number of licenses available, MPT may select licensees by comparing aspects of individual applications or using a frequency auction method. It also points out that if an auction is introduced, it may take a reasonable time to prepare an appropriate regulatory framework. Although this shows that MPT is giving due consideration to establishing a new spectrum allocation method, it has not been decided which method would be introduced. Considering the rapid growth of mobile services in Japan and the need to allocate new spectrum for IMT 2000 services, it is vital that a transparent and fair spectrum allocation system be established as rapidly as possible.

Numbering issues

The accelerated development and modernisation of telecommunications infrastructure competition and the increasing number of new facility-based carriers in Japan have highlighted the importance of telecommunications numbering policy. In recognising the importance of numbering policy, MPT added relevant provisions for telecommunications numbers in the TBL when it was revised in 1997, in order to ensure fair and efficient use of number resources.

As in many other countries, "number portability"[42] is now recognised in Japan as an essential feature of a competitive telecommunications market. In a competitive market, telephone subscribers must be permitted to change telephone service providers without changing numbers, *i.e.* without taking on a new network identity. Recognising the importance of number portability, the Council recommended in its report, "Basic rules on interconnection", that it should be implemented as soon as possible and proposed FY 2000 as a target year for implementation. Based on the Council's proposal, MPT set up a "study group for the realisation methods of number portability" in August 1997. The study group has proposed the realisation method of number portability for fixed voice telephony service, ISDN and free-phone services.

Despite the lengthy period of study of number portability, MPT has not yet announced a concrete plan for implementation. This raises the question of whether implementation will be feasible in FY 2000. Considering the fact that NTT has virtually a 100% market share in local loop competition, number portability is essential for new entrants if they are to attract customers without imposing unnecessary costs or inconvenience. Since the implementation of number portability may take some time because of the need for technical changes once the plan is finalised, MPT should decide a concrete action plan to implement it rapidly. In addition, considering the rapid growth of mobile services in Japan, it is recommended to consider including mobile services in the number portability plan as well as geographic mobility where possible, as is being done in Denmark, the Netherlands and the United Kingdom in favour of the convenience of users.

Another important numbering issue is equal access to customers. Since carrier pre-selection has not been implemented yet, 13 years after competition was introduced, NCCs face unequal competitive conditions, which require customers to use additional prefix numbers to access NCC services. The "study group on dialling parity" submitted a report[43] on the implementation of carrier pre-selection in

November 1998, which proposed to introduce carrier pre selection by the spring of 2001. Based on the report, it is planned that MPT will prepare legislation in April 1999, which is scheduled to come into force from 31 December 2000.

Perhaps the most significant factor hindering quick implementation of carrier pre-selection in Japan is the diversity of opinion among new carriers. While new entrants to the international market, such as Worldcom Japan, strongly support carrier pre-selection, many early NCCs are not enthusiastic. In spite of the four-digit carrier identification code (whereas KDD has only a three-digit code), the early international NCCs are opposed to a carrier pre-selection system because they have already invested heavily in advertising their current identification codes as a brand name, and have built up market share using the current system (Table 10).

Table 10. **Carrier identification codes for international service**

	KDD	JT	IDC
Identification code	001	0041	0061

Source: MPT.

In terms of the national long-distance market, the original NCCs use LCR chips in their terminal equipment. Today, almost all telephone terminals sold in Japan have LCRs, except those sold by NTT shops. The original NCCs give commissions to retailers who sell telephones with their LCR chip, which enables subscribers to bypass the carrier identification code (Table 11) when using national long distance services. In addition to commissions to retailers, NCCs subsidise telephone terminal manufacturers who make terminal equipment with their LCR chips. Because NCCs have invested significantly in terminal equipment with LCR chips, they are also opposed to carrier pre-selection. NCCs insist that LCR chips should be allowed even if carrier pre-selection is introduced so as to protect consumers who already own terminal equipment with LCR chips. On the other hand, new entrants argue that the removal of LCR chips is essential to ensure fair access to customers. The interim report on the "study group on dialling parity" supported the position of the early NCCs.

Table 11. **Carrier identification codes for national long distance service**

	NTT	DDI	JT	KDD
Identification code	none	0077	0088	0070

Source: MPT.

Given the various interests involved, MPT has not decided how many choices will be given to consumers, while it has proposed the date for implementation. As the incumbents (NTT and KDD) enjoy an advantage owing to the delay in implementing carrier pre-selection, MPT should promptly establish a concrete plan to introduce it. In addition, the carrier pre-selection mechanism should be decided so as to ensure fair competition between new entrants and current players (the incumbents and the early NCCs).

2.2.6 Universal service obligation

In Japan, the NTT Law specifies universal service as an obligation of NTT. According to Article 2 of the law, NTT should ensure appropriate, fair and stable provision of nation-wide telephone services, and these should be provided *impartially*. As a result, only NTT's fixed voice telephony service is regulated as a universal service. While the word "impartially" seems to suggest uniform tariffs nation-wide, NTT monthly subscription charges are different over regions based on the number of total access lines in a message area (See Table 9. in Section 2.2.3).

Compared with some other OECD countries,[44] universal service in Japan is limited, as it is focused on voice telephony. Because the funding of a broadly defined universal service requirement through levies on the telecommunications industry can reduce efficiency and undermine other policy goals, a limited universal service obligation helps to minimise any unnecessary economic burden on telecommunications operators. However, the report[45] from the study group for "Research into Universal Services and Rates in the Multimedia Age" recommended an expansion of the scope of universal service in order to avoid the development of a society of information "haves" and "have nots". If expanding the scope of universal service is deemed essential to meet this policy objective, it should be funded through general government revenues rather than license obligations or other forms of intervention in the telecommunications industry.

Currently, there is no funding mechanism for the provision of universal service, so NTT alone bears the burden of providing universal service. NTT has traditionally financed universal service through cross-subsidisation from low-cost to high-cost areas, or from long distance to local calls. As competition develops, it is increasingly difficult for NTT to use cross-subsidisation to provide universal service. Thus, the question of how to finance universal service is becoming a more important issue in Japan. There are two different opinions among carriers on whether to establish a funding mechanism for universal service. NTT argues that it is necessary to establish a mechanism to share the cost of universal service after its reorganisation since NTT East and NTT West will no longer be cross-subsidised by long distance services. On the other hand, companies such as KDD argue that establishing a universal service fund will prevent local markets from becoming more competitive and reduce incentives for NTT to increase its efficiency.

Any universal service funding mechanism[46] should be transparent and competition and technology neutral. It should also be held separate from interconnection payments. Some operators argue that since NTT interconnection charges are high, and not cost-based, they are obliged, under the current interconnection scheme, to subsidise part of the cost of universal service. When the LRIC methodology is introduced in 2001, interconnection charges should become cost-based. A universal service funding mechanism will then be needed to remove any unfair economic burden on NTT local companies.

2.2.7 International aspects

Japan's commitments in the context of the February 1997 WTO agreement on basic telecommunication services included national treatment of foreign companies (except for the 20% foreign ownership restriction on NTT and KDD (Table 12). Based on Japan's WTO commitment, MCI WorldCom Japan, became the first 100% foreign-owned entity to obtain Type 1 approval in March 1998. BT Communications Services also obtained a Type 1 license in July 1998. As of February 1999, there are six 100% foreign owned Type 1 carriers and 31 Special Type 2 carriers.

Table 12. **Japan's commitment to the WTO agreement on basic telecommunication services**

Range of services opened	Timing of liberalisation	Commitment to common set of regulatory principles	Foreign ownership restriction	Most favoured nation exemption
Full	As of enforcement of WTO agreement (5 February 1998)	Full	None except for NTT and KDD (less than 20%)	No

Note: The foreign ownership restriction on KDD was lifted after abolition of KDD Law.

In Japan's WTO schedule, there are two issues, which differ from those of other countries. First, unlike other signatory countries, which impose interconnection obligations on major carriers based on market power, Japan imposes interconnection obligations only on a major operator with control over essential facilities. This implies that Japan is not obliged to impose special interconnection obligation, which applies to a "designated telecommunications facility" such as NTT's local loop, on NTT DoCoMo or KDD, even though they have market power in their market segments. Second, the independence[47] of MPT can be put in jeopardy since the Japanese government owns a majority share of NTT. While MPT argues that NTT shares belong to the Ministry of Finance and not MPT, there is a possibility of a potential conflict of interest, since the government is at the same time an owner of NTT and a regulator of the telecommunication sector (both MPT and the Ministry of Finance are under the responsibility of the Prime Minster).

Trading partners like the United States and the European Commission complain that the Japanese regulatory framework is not transparent and prevents foreign companies from entering into fair competition. The background report on Enhancing market openness through regulatory reform analysed a number of concerns that Japan's trading partners have raised about the Japanese regulatory framework in the telecommunications sector. MPT has made significant changes to address concerns of foreign firms in particular. For example, along with lifting foreign ownership restriction on Type 1 carriers and KDD, the "100 destination rule" was abolished, and international simple resale has been also liberalised since the end of 1997.

Box 5. **Liberalisation policies in international telecommunication service**

Feb. 1996	Interconnection through a third country's switched transit is allowed
Dec. 1997	International simple resale is allowed
Feb. 1998	Elimination of foreign capital restrictions on Type 1 carriers (except NTT)
June 1998	Elimination of "100 destination rule"

As mentioned in the background report on Enhancing market openness through regulatory reform, major issues raised by the United States and the European Union relate to the licensing scheme, the interconnection charges framework, rights of way, scope of universal service, number portability, etc. Indeed, the issues cover virtually all the major regulatory safeguards in the telecommunications sector. Although Japan has no legal obligation to respond to demands from foreign trading partners, it has acceded to some requests such as the introduction of LRIC system in order to ease tensions with its trading partners. It needs, however, to be recognised that similar types of complaints, covering the same issues, are being made on a number of European Union member countries and the United States.

2.2.8 Streamlining regulation and application of principles of competition

The TBL has no specific provisions on regulatory forbearance, except as it relates to price regulation. Under the TBL, the Minister can decide whether a specific service is subject to price-cap regulation or the tariff notification system. As a matter of principle, as markets become more competitive, it will be necessary to reduce sector-specific regulation. Although it is very difficult to determine when there is sufficient self-sustaining competition, the decision to reduce sector-specific regulation should depend on the state of market competition rather than on general public interest criteria. In this regard, MPT should take into account the level of competition when determining which services will be subject to the tariff notification system.

In Japan, the AMA applies to the telecommunications sector. There are no exemptions. Therefore, the FTC can regulate any business activity that is in violation of the AMA. Since both the TBL and the AMA apply to the telecommunications sector, MPT and the FTC share, in principle, regulatory power in this industry. However, the FTC has sole responsibility for enforcing the AMA, while economic and technical regulations are implemented exclusively by MPT.

There are specific areas, such as price regulation and mergers, where both the MPT and the FTC have regulatory power. Regarding price regulation, the MPT has the authority to decide whether specific services are subject to the notification or to the approval system. When it is decided that a specific service (*i.e.* NTT local service) is to be subject to approval by the Minister, the Minister has the authority to impose price regulation on this service. On the other hand, under the AMA, the FTC has authority to regulate all forms of price-fixing activities and predatory pricing behaviour. Nonetheless, the FTC has never exercised its regulatory power on telecommunications pricing activities that have received approval from the MPT.

In the case of mergers between Type 1 carriers or a Type 1 carrier and other companies, both MPT and the FTC have independent regulatory powers under the TBL and the AMA. Article 16 of the TBL states that no transfer or take-over of the whole of a Type 1 telecommunications business shall take place unless it is authorised by MPT. While the FTC's decision on a merger case is based on whether there will be a substantial restraint on competition, MPT's decision is based on the same standards that apply to Type 1 license applicants. Since there are neither a formal consultation procedure between MPT and the FTC nor any concurrent jurisdiction requirements regarding merger decisions, each can block a merger with its own regulatory power. In the merger between KDD and Teleway Japan, the MPT and the FTC did not consult or share information. As a matter of principle, sharing information would help both bodies by allowing them to have a more comprehensive view of merger cases. In this regard, it is recommended that an information-sharing mechanism between the two bodies be established in order to increase the ability to deal with merger cases.

Until now, except for a very few FTC decisions[48] on mobile operators' anti-competitive behaviour such as fixing mobile phone handset prices, the FTC's involvement in the telecommunication sector has been extremely limited. However, as competition develops, the role of competition law in the telecommunications market should be strengthened and unnecessary sector specific regulation needs to be lifted by the regular review on sector specific regulation.[49] The effectiveness of forbearance reviews will be increased if interested parties such as carriers can have a right to request streamlining of specific regulations.

2.3 The dynamic view: convergence in communications markets

The rapid convergence-taking place between broadcasting, content and communications technology and services is bringing into focus the need for "next generation regulation". For regulators, the trend in technological and service convergence requires looking beyond current telecommunication regulatory frameworks to consider how to facilitate the process of convergence, maximise the benefits of competition among traditionally different sectors and ensure that their economies benefit from convergence through the development of new services, such as electronic commerce. Japan has an institutional advantage in meeting these challenges, since MPT is responsible for both telecommunications and broadcasting (and indirectly for content, since illegal and harmful content is managed through broadcasting licensing requirements) (Table 13).

MPT has made efforts to accelerate the process of convergence by allowing CATV operators to provide telecommunications services and lifting foreign ownership restrictions on CATV operators who have Type 1carrier licenses. In addition, "the study group for discussion on convergence and development of telecommunication and broadcasting" made a report on the policy issues of convergence in May 1998.

Table 13. **Comparison of the regulatory frameworks of telecommunications and broadcasting**

	Telecommunications	Broadcasting
Regulatory regime	Telecommunications Business Law Radio Law NTT Law	Broadcast Law CATV Broadcast Law
Market entry	Permission: Type 1 Registration: special Type 2 Notification: general Type 2	Individual licensing: Broadcasting Permission: CATV
Regulatory institutions	MPT	MPT

Source: MPT.

However, Japan, like most OECD countries, has maintained strong service-specific regulation in both markets and maintains a different regulatory framework for telecommunications and broadcasting. With the convergence of the two communications technologies and services, it will become increasingly difficult to designate individual operators and even services as falling into different service categories. The fragmented regulatory framework that presently exists in many OECD countries, which sharply distinguishes telecommunications and broadcasting, may hamper the future development of the communications sector. As for many OECD countries, a challenge for Japan will be to amend its regulations in order to take full advantage of the benefits flowing from convergence.

3. Performance of the telecommunications industry

3.1 Competition analysis

In order to promote fair market competition, all necessary regulatory safeguards should be in place so that new entrants have a level playing field with respect to firms with market power While many regulatory developments has been made in recent years, some essential regulatory safeguards such as forward looking interconnection accounting method, number portability, carrier pre-selection, spectrum allocation method for a limited number of licences, and universal service funding mechanism, are still not in place. As a result, in spite of quite a large number of market players, users have not benefited from competition as much as might be expected or compared with those of other OECD countries that liberalised their telecommunications market early such as the Untied States and the United Kingdom (see Section 3.2).

This regulatory problem should be kept in mind when assessing the level of competition in each telecommunication market segment.

In the fixed voice telephony market, the developments of the last several years would indicate that there has been good progress in the level of competition in the long distance and international markets. In particular, as of December 1997, 88 companies, including AT&T, provided call-back services in Japan. In addition to the current, relatively sound, market share of new common carriers in both markets (Tables 14 and 15), cross-entry by NTT and KDD into each other's market is expected to increase competition. Furthermore, new entrants such as WorldCom Japan and BT view these market segments as their strategic markets, so that competition will be strong.

Table 14. **National long distance market shares of new operators**

share of switched minutes – per cent

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Australia								0	0.5	2	7.6	11.7		17.9
Canada							0	5	7	14	18			
Denmark													0	5
Finland										0	50	60	59	59
Japan[1]			**0**	**3**	**6**	**10**	**15.9**	**22.4**	**26.8**	**29.1**	**31.3**	**31.9**	**35.7**	**40.6**
Korea													9	8
Mexico													0	18.8
New Zealand							0	12	18	19	21	22		25
Sweden											0	5	10	17
United Kingdom		0	2	4	6	7	8	9	10.7	14	16.5	18.6	21	24
United States	19.8	20.2	23.2	28	31.5	35.1	37.4	37.8	39.5	39.8	41.5	44.5	47.8	48.6

1. Data for Japan are the combined share of NCCs inter-prefecture traffic as measured by number of calls.

Table 15. **International market share of new market entrants**

Share of minutes of international traffic – per cent

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Australia						0	4.4	13	21	27.8	38	45
Canada[1]							0	7	20	37	43	44
Denmark										0	7.5	25
Finland								0	9	27	34	39
Ireland											0	9
Korea						0	20.1	25.5	31.3	27.4	26.5	32
Japan		**0**	**3.1**	**6.7**	**18.3**	**26.7**	**30.4**	**33.1**	**33.7**	**33.8**	**35.1**	**40.6**
Mexico											0	31.6
Netherlands											0	5
New Zealand					0	11	15	17.4	21	21	21.8	36
Sweden							0	7.4	15	21	25	32
United Kingdom	0	0.2	1.5	4.5	9	14	22.3	26.3	30.5	30.3	40	51
United States	5.7	7	10.9	16.7	21.6	25.2	29.7	37.8	41	44.2	50.1	54.7

1. Canada-United States route only.

Source: OECD, *Communications Outlook 1999*.

On the other hand, in the local-fixed voice telephony market, NTT's dominance can be expected to continue for some time. In most OECD countries, incumbents have strong market power in the local market even after liberalisation of the telecommunications market and Japan is no exception. As discussed before, NTT holds virtually a 100 % market share in the local market. However, there are some signs of greater competition in this segment. For example, since January 1998, TTNet has successfully entered the residential voice telephony service market by providing telephone relay services linked to NTT's local exchange. A couple of cable companies also provide voice telephony services using their CATV networks. NTT will also face more competition from utility-based Type 1 carriers.

The mobile sector already has intense competition in Japan. There are five or six mobile operators in each market block. NTT DoCoMo has a dominant position (57 % market share as of March 1998) in the lucrative cellular market, and DDI Pocket is the largest player in the PHS market.

Mobile competition is already leading to structural change resulting, as mentioned previously, in the merger of PHS services and cellular mobile service companies. In addition, companies such as DDI Pocket are targeting data communication users to expand business opportunities and to try to reverse the flow of subscribers to cellular services. The adoption of the IMT 2000 standard in 2001 should intensify competition in this market segment.

Many major players like NTT, KDD and DDI aim to provide "one-stop shopping" for all telecommunications services to their customers. For instance, in October 1997, NTT established a subsidiary Type 1 international company, NTT Worldwide Network Corporation, in order to prepare for full-scale entry into the international service market after its reorganisation. In addition, NTT launched its "Arcstar" service that offers seamless, end-to-end international services to meet demand from multinational companies. In the longer term the provision of "one-stop shopping" will give customers more choice of telecommunications services.

The presence of major global telecommunications players in Japan will help to promote healthy and high-quality competition. Although entry into the Type 1 market had been restricted for a long time, many major global players are already in the Japanese market as investors in Type 1 carriers or as owner of Type 2 carriers. Besides MCI WorldCom Japan and BT which provides services as a Type 1 carrier, AT&T, C&W, Deutsche Telekom, Telstra, and many other international carriers have a presence in the Japanese telecommunications market. The elimination of the foreign ownership restriction on Type 1 licenses will increase the number of foreign carriers in the Type 1 market.

In summary, Japan has a very healthy competitive environment in terms of numbers and quality of players. The level of market competition will increase with the elimination of line-of-business and foreign ownership restrictions. Nonetheless, lacking some essential regulatory safeguard prevents Japanese consumers and telecommunications companies from taking full advantage of the benefits of competition.

3.2 International performance comparisons

3.2.1 Price

Among the many available performance indicators, price is arguably the most important in evaluating the success of liberalisation for users. According to MPT's "1998 White Paper Communications in Japan", in contrast to an average price rise of 4.7 % in Japanese industry as a whole between 1990 and 1996, the telecommunications sector delivered reduced prices to consumers by an average 16.1%. The ripple effect is estimated to have accounted for a 0.39% fall in prices charged by industry as a whole, greater than the 0.32% due to lower charges in the gas and electricity industries and far outstripping the 0.09% contribution of the transport sector.

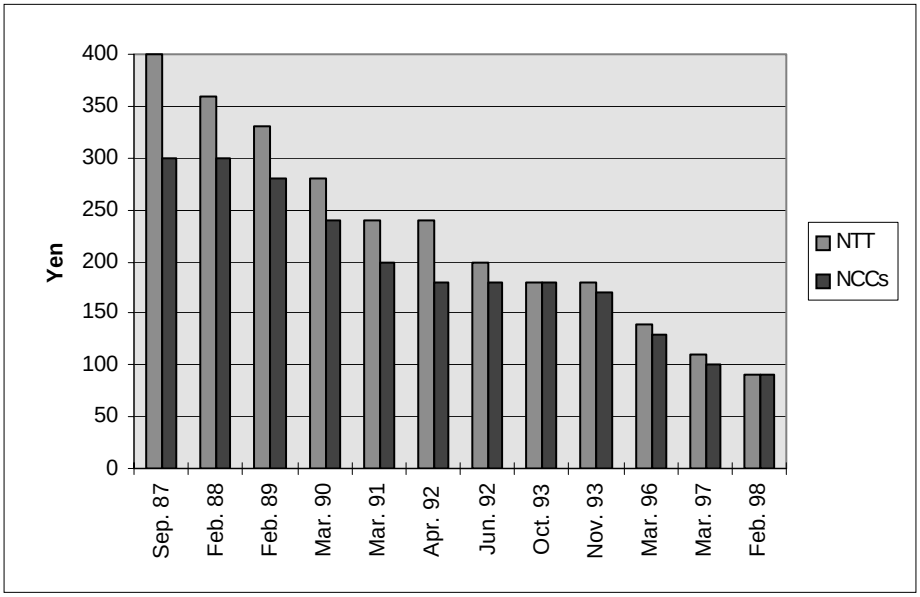
Since NTT's usage charges (10 yen for three minutes) for local fixed voice telephony service have not changed for decades, most reductions have occurred in national long distance and international fixed voice telephony services. The drop in long distance call charges between Tokyo and Osaka is often mentioned as an example of rapid rate reduction in Japan; it declined by 77.5% from 400 yen to 90 yen between April 1985 and February 1998.

Nevertheless, the benefits of competition have not been fully felt owing to heavy price regulation which was just removed in November 1998. Arguably, the benefits of competition can be most effectively compared across countries through changes in long distance call charges, since there has been no serious

competition in the local market in most countries, and international call charges can be significantly affected by the calling pattern (i.e. the location of a country). Figure 4 shows long distance call charges over time in Japan and Figure 5 compares Japan's long distance charges with those of selected OECD countries. As Figure 4 indicates, all NCCs in the long distance market have had the same tariff structure (this is also true of the international market), and NTT's price and the NCCs' prices have been adjusted almost simultaneously under the tariff approval system.

In spite of the massive price reductions in long distance call charges in Japan, Figure 5 shows that even France, which introduced competition only in 1998, has performed better than Japan over the period.

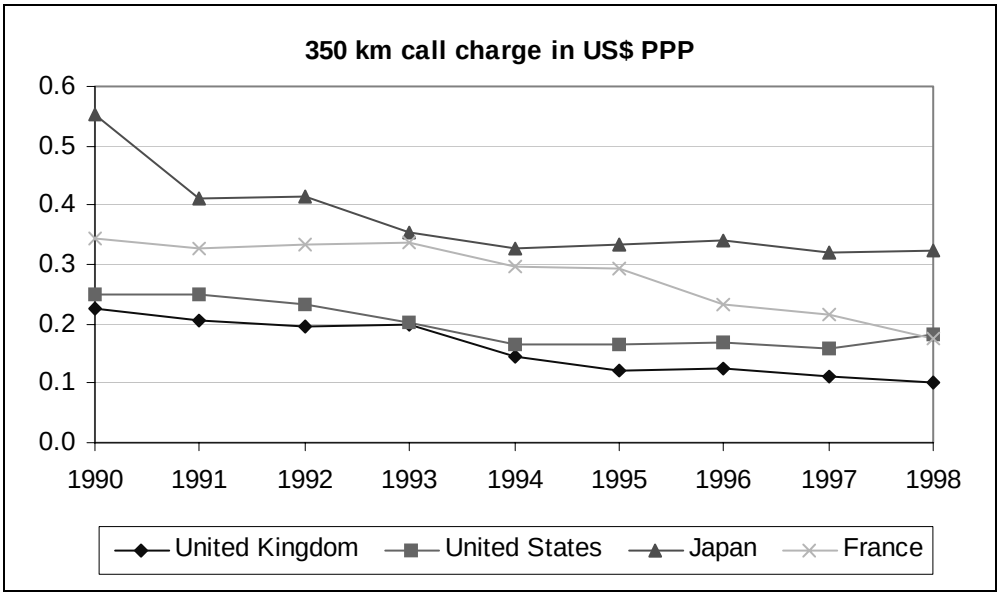
Figure 4. **Rate reductions for long distance call charges**



Note: A weekday, daytime, three-minute call for the maximum call distance. (Over 160 km for NTT and over 170 km for NCCs since March 1991. Previously, over 320 km for NTT and over 340 km for NCCs).

Source: 1998 NTT Annual Report, *Information & Communications in Japan 1997*, (InfoCom Research Inc.).

Figure 5. **Comparison of long distance call charges**



Note: Price of one minute, based on 4.5 minute call.

Source: OECD and EURODATA.

In terms of mobile services, current OECD comparative data are for analogue prices and are not appropriate to explain changes in cellular mobile tariffs in Japan. Since 1994, Japan has introduced digital mobile services and prices have been much lower than those for analogue services (Table16).

Table 16. **Comparison of mobile price charges in Japan**

	Analogue	Digital
Monthly subscription charge	6 600 yen	4 600 yen
Call charge (3 minutes)	150 yen	100 yen

Note: NTT DoCoMo's cellular phone rate (daytime during weekdays, intra-prefecture rates) as of February 1999.

Source: MPT.

In fact, there has been a series of price cuts in mobile services since the introduction of the tariff notification system in December 1996. From December 1996 to February 1999, in addition to the elimination of subscription charge, NTT DoCoMo has reduced its monthly subscription charges by about 32% (from 6 800 yen to 4 600 yen) and three-minute call charges by more than 44% (from 180 yen to 100 yen) for its digital cellular service. Other mobile carriers have also reduced their charges significantly during this period.

The mobile market shows the benefits that can be reaped from full price competition; changing price regulation for fixed voice telephony services may result in changes similar to those in cellular mobile prices.

3.2.2 Other indicators

As discussed in Section 2.2.4, the quality of Japan's telecommunications service is among the highest in the OECD. Carriers have invested significantly to upgrade their networks and adopt new technologies. In FY 1997, total investments by Type 1 carriers reached 4.2 trillion yen, representing over 9% of total investment (46.5 trillion yen) by all industries in Japan. As a result, much progress has been made in the telecommunications sector. For example, in 1993, only 72% of mainlines were digital; by 1997, 100% were digital (Table 17).

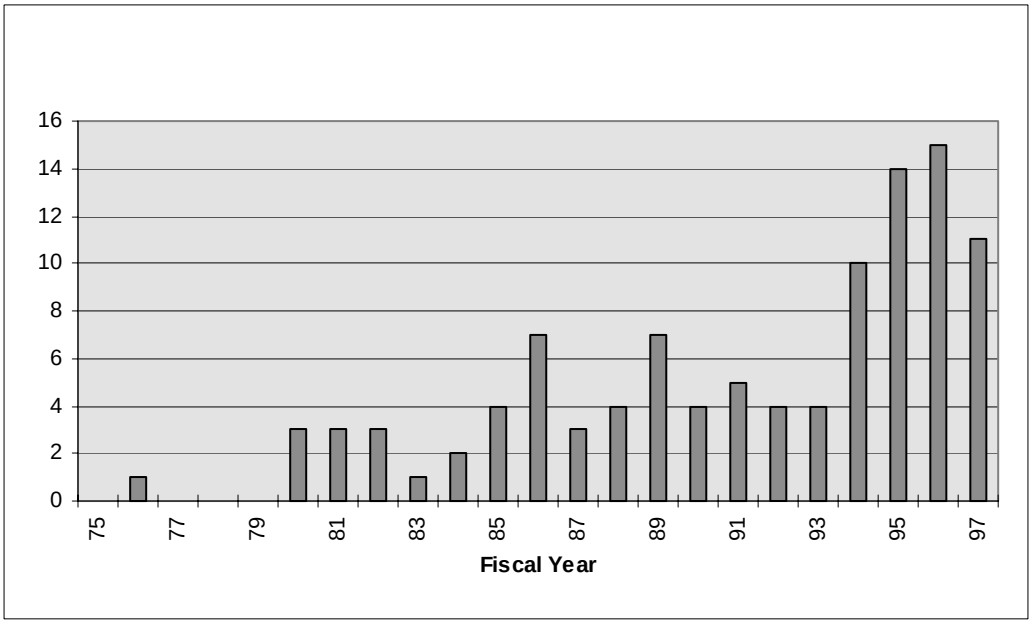
Table 17. **Digitalisation of fixed network**

	1993	**1995**	**1997**
Japan	72	90	100
United Kingdom	75	88	100
United States	82	90	94.5
OECD average	69.25	81.65	89.22

Source: OECD, *Communications Outlook 1999.*

In line with technological developments, many new services and discount schemes have been introduced since competition began in 1985. It is expected that this trend will be strengthened by the introduction of the tariff notification system in all telecommunications services. Between 1975 and 1985, there were only 13 new services and discount schemes, but since 1985 there have been 88 in all.

Figure 6. **The number of new services and discount services started in each fiscal year**



Note: For FY 1997, data from April to August 1996.

Source: MPT.

4. Conclusions and recommendations

4.1 General assessment of current strengths and weaknesses

Box 6. **Strengths**

- strength and high quality of new common carriers
- No line-of-business restrictions
- Fast development of alternative infrastructure
- Recent acceleration of liberalisation efforts towards full fledged competition

Japan has had 13 years of telecommunications liberalisation, with the result that it has a large number of carriers in each market segment. More importantly, except in the local market, the new common carriers have a relatively strong market share. It is expected that the level of competition will increase with the elimination of the tariff approval system and foreign ownership restrictions on Type 1 carriers. Furthermore, the presence of many major global telecommunications companies ensures high-quality competition among players.

Although carriers are experiencing difficulties to combine Type 1 and Type 2 services within a single company structure, there is no line-of business restrictions except those imposed on NTT. The revision of the NTT Law and the repeal of the KDD Law make it possible for all carriers to enter all telecommunications markets without restriction. In addition, CATV operators are allowed to provide their telephony services using their own networks. Together with the development of technologies which enable companies to provide less expensive local access through wireless local loops, the use of CATV networks for telecommunications will lead to increased network capacity, suitable for delivering multimedia and Internet services to end users.

There has been significant growth in mobile and CATV subscribers. Many young people choose a mobile phone not as a complement to a fixed telephone but as a substitute. CATV companies are attracting customers with new networks that can be used for telecommunication purposes. Furthermore, utility-based Type 1 carriers are beginning to compete in the local market. It is expected that the combination of these developments will enable users to enjoy more choice in all types of telecommunications services, including local voice telephony.

While Japan has liberalised its telecommunications market as early as 1985, most of the important liberalisation measures have been adopted very recently. In fact, the liberalisation has accelerated since the establishment of the second reform plan in 1996. Based on the second reform plan, many important liberalisation measures have been implemented in favour of full-fledged competition in the telecommunications market. Indeed, the recent introduction of tariff notification system is an important sign of changes moving toward full-fledged competition.

Box 7. **Weaknesses**

- Carrier classification system and market entry procedure
- Difficulties in access to rights of way
- Ownership and structure of NTT
- No transparent spectrum allocation method for selecting licensees when the number of applicants exceed the available licenses
- Lack of essential regulatory safeguards such as number portability and carrier pre-selection
- No universal service funding mechanism
- Combination of regulatory and industry promotion function.

Despite early liberalisation of the telecommunications market in 1985, there are still some regulatory problems. If not successfully addressed, they will impede the development of fair competition between the incumbents and new entrants. Consequently, users will not be fully benefited until these problems are resolved.

a) MPT has authority to grant Type 1 licences and to refuse Special Type 2 registrations by the examination standards that are based on the public interest provisions in the TBL. Furthermore, the regulatory distinction between Type 1 carriers and Type 2 carriers imposes many unnecessary burdens on carriers.

b) Fragmented regulations on rights of way prevent new entrants from constructing their own infrastructure and give an unfair advantage to the incumbents and utility-based Type 1 carriers.

c) Foreign ownership restriction on NTT still exists. In addition, mandatory minimum one-third government ownership of NTT raises a problem of conflict of interest, given that the government is both shareholder and regulator.

d) The holding company structure of NTT will restricts effective infrastructure competition between NTT East and NTT West.

e) The lack of a transparent and fair spectrum allocation method prevents companies from competing on a level playing field.

f) The lack of essential regulatory safeguards such as number portability and carrier pre-selection gives an unfair advantage to the incumbents and the early NCCs.

g) The lack of a universal service funding mechanism makes it difficult to prevent cross-subsidisation of NTT's services.

h) Since the regulatory body's independence can be effectively ensured only when it is separated from interested parties, MPT's responsibilities both on regulatory function and industry promotion function weaken the independence of regulatory function in the Japanese telecommunications sector.

4.2 Potential benefits and costs of further regulatory reform

In general, in spite of recent regulatory developments, Japan has yet to complete the reforms in its regulatory framework that would facilitate the transition from a monopoly to a competitive telecommunications market. As described in Section 4.1, outstanding regulatory issues need to be addressed appropriately and promptly if the benefits of competition are to be realised. While Japan has already taken a big step by abolishing the tariff approval system in favour of free price competition, many essential regulatory safeguards are not in place yet. Unless MPT makes swift actions to implement such safeguards, competition will continue to develop slowly.

However, if MPT makes the necessary changes, the impact could be significant thanks to an already developed market structure. It is important to ensure that market participants compete effectively in the market and that such competition is not constrained by MPT. It is suggested that Japan consider the following recommendations.

4.3 Policy recommendations

1. Ensure that regulations and regulatory processes are transparent and non-discriminatory and applied effectively

- *Establish effective government-wide measures, which resolve access to rights of way problems for new entrants in order to promote facility-based competition.*

The Japanese government should provide effective measures for resolving carriers' difficulties related to access to rights of way due to the fragmented responsibilities for rights of way. In particular, it would be recommended to enhance transparency of rights of way regulation by publishing a guideline to access rights of way just as market access. *Implement the LRIC methodology as soon as possible as a means of ensuring more cost-oriented interconnection pricing*

Since the ABC accounting system is based on historical cost, new entrants face high interconnection charges. This prevents them from offering low-cost services to customers. Although MPT has already decided to submit the bill to the Diet in 2000 in order to introduce the LRIC method, the implementation timetable should be accelerated in order to ensure more cost-oriented pricing.

- *MPT should establish as rapidly as possible a transparent and fair spectrum allocation method to select licensees when applicants outnumber licenses in order to ensure that all applicants can compete fairly when applying for a mobile license*.

The lack of a transparent spectrum allocation method to select licensees when applicants outnumber licenses is a significant weakness of the Japanese telecommunications regulatory regime. Although MPT is considering introducing a new spectrum allocation method, it is not decided which method will be adopted and what the criteria will be for selecting new licensees. To ensure a fair chance to all potential entrants, the new spectrum allocation method should be in place in time for the allocation of spectrum for IMT 2000 services.

- *MPT should rapidly implement number portability and carrier pre-selection to ensure fair competition between current players and new entrants.*

The lack of number portability and carrier pre-selection gives an unfair advantage to the incumbent and to some extent to the early NCCs. MPT should promptly introduce these regulatory safeguards, which are essential to fair competition. Mobile services should be included in the number portability plan, and consumers should have sufficient carrier pre-selection choices to ensure fair competition between new entrants and current players.

2. Reform regulations to stimulate competition, and eliminate them except where clear evidence demonstrates that they are the best way to serve the broad public interest

- *To promote competition, the present carrier market entry requirements should be made simpler and more transparent.*

Under the TBL, the Minister has authority to grant Type 1 and to refuse Special Type 2 licenses using examination standards based on the public interest provisions in the TBL. Furthermore, carriers are not allowed to combine Type 1 business and Type 2 business. These regulations impose unnecessary economic burdens on carriers. MPT should abolish the current market entry scheme and establish a simple and transparent scheme such as 'class licence' system for all carriers.

- *The requirement of partial government ownership on NTT should be lifted so as to eliminate any conflict of interest by having the government as both a regulator and a shareholder.*

The NTT Law requires the government to hold one-third or more of NTT shares. As competition develops, the basis of regulation for NTT should move from treating it as a special company to using market power criteria and treating the company as a dominant player, which controls essential facilities. In this regard, ownership restrictions on NTT should be removed and it is also recommended that the Japanese government move faster towards full privatisation of NTT. In addition, current foreign ownership restriction also should be lifted.

- *A transparent universal service funding mechanism, that is competitive and technologically neutral, should be established.*

Current universal service obligations on NTT are implicitly funded through cross-subsidisation of NTT's services and make it difficult for NTT to establish cost-based charges for its services. Furthermore, the lack of an explicit universal service funding mechanism is one reason for high interconnection charges. Universal service cost should be transparent and clearly separated from interconnection charges. In this context, it is essential to establish a transparent and competitively and technologically neutral universal service funding mechanism in line with the break-up of NTT and the introduction of the LRIC system.

3. Review, and strengthen where necessary, the scope, effectiveness and enforcement of competition policy

- *As competition develops, the role of competition law in the telecommunications market should be strengthened, and sector specific regulation should be reviewed periodically in order to streamline the regulation.*

MPT should forebear from regulation in areas or for activities where sufficient competition has emerged and conditions will allow the development of effective and sustainable competition between carriers. Excessive sector-specific regulation on carriers may hamper development of the full benefits of competition. Periodic reviews of regulation to determine where streamlining can take place should be undertaken. It is recommended that all market players should be able to request streamlining reviews.

- *Options for making the NTT regional companies fully independent should be reviewed, because infrastructure competition between NTT regional companies appears unlikely develop under common ownership.*

The break-up of NTT is consistent with competition in the local market to the extent to that other competitors enter the market, but the holding company structure means that the NTT companies do not have strong incentives to compete against each other and have no incentive to enter into infrastructure competition. Thus, the benefits of divestiture may not be fully realised. The Japanese government should review the current holding company structure, making the NTT regional companies fully independent of each other, in order to realise the benefits of divestiture.

Regulatory functions should be independent from industry promotion functions, with transparent procedures and the process for the review of decisions.

Both as a regulator and a policy maker, MPT is responsible for consumer protection as well as industry promotion in the telecommunications sector. Since the regulatory body's independence can be effectively ensured only when it is separated from interested parties, the Japanese government needs to ensure greater separation of regulatory functions from industry promotion functions.

NOTES

1. OECD, Communications Outlook 1999. The United States is the world's biggest market with total revenue of $254.6 billion.

2. NTT's revenue includes NTT DoCoMo's revenue.

3. OECD, *Communications Outlook 1999*.

4. Telecommunications operators which provide telecommunications services by establishing their own circuits and facilities.

5. The government issued the first block of 200 000 shares at 1 197 392 yen each in October 1986. It planned to sell one-half of the shares in four equal blocks annually beginning in 1986, but only sold part of the third block in 1988 due to the sharp drop in the stock price, and then postponed further sales. It is planned to sell 1 million shares in December 1998.

6. Deregulation, promotion of network interconnection and NTT's reorganisation are the three main goals of the "second info-communications reform".

7. The following provisions were deleted:

   - Article 10 (1): Telecommunications services shall be appropriate in the light of the demand.
   - Article 10 (2): Telecommunications circuit facilities shall not result in significant excess.

8. The abolition of the KDD Law was based on the "Emergency Economic Policy Package Reforming Japan for the 21st Century" which was adopted at a Cabinet Meeting on Economic Measures in November 1997. The package also included other telecommunications related issues such as:

   - reducing the scope of Special Type 2 carrier;
   - enabling Type 2 carrier to establish subscriber transmission circuit facilities which connect only one user;
   - reduction of Type 1 and Type 2 carrier categories to three (previously seven categories for Type 1 and four for Type 2);
   - abolition of the tariff approval system and introduction of the notification system.

9. There are ten market blocks: Hokkaido, Tohoku, Kanto, Tokai, Hokuriku, Kansai, Chugoku, Shikoku, Kyushu and Okinawa.

10. FTC pointed out that without further deregulation and equalisation of conditions for competition the break-up of NTT would not be effective in promoting competition in the entire telecommunications industry.

11. The NTT trade union intensely lobbied politicians against Council's break-up proposal. In fact, the Social Democratic Party took an official position against the break-up. It was very difficult for the Liberal Democratic Party to make a firm commitment due to the upcoming election.

12. Throughout the paper, the term NCCs stands for the original new common carriers in the long distance market (DDI, Japan Telecom and Teleway Japan) and in the international market (ITJ and IDC).

13. In addition, TBL Article 1 states that the purpose of the law is "… to ensure the proper and reasonable operation of telecommunications business, to secure the consistent provision of telecommunications services, and to protect the interests of its users, and thereby guarantee the sound development of telecommunications for the convenience of the public, and the promotion of public welfare."

14. In December 1980, the United States and Japan signed the first NTT Procurement Agreement.

15. There are ten market blocks (see note 10).

16 *Communications Outlook 1999*.

17. The Japanese Government announced the abolition of foreign ownership restriction on CATV companies by the end of 1998 based on the New Three-Year Deregulation Action Plan (March 1998).

18. Age distribution of cellular and PHS users.

Percentage, as of March 1997

	-9	10-14	15-19	20-29	30-39	40-49	50-59	60	No response
Cellular	0.9	0.5	4.1	30.5	21.0	21.2	11.8	4.6	5.3
pHs	0.3	1.2	18.3	28.7	16.7	13.7	8.0	7.1	5.9

Source: MPT.

19. MPT, *1998 White Paper Communications in Japan*.

20. MPT, *1998 White Paper Communications in Japan*.

21. *Communications Outlook 1999*.

22. MPT, *1998 White Paper Communications in Japan*

23. Article 94 of TBL stipulates 21 specific cases in which the Minister should consult with Council before taking its decision.

24. MPT uses the examination standards when it decides whether applicants meet public interest provisions in the TBL.

25. Examination standards: 1. Regarding financial basis and technical capability to undertake telecommunications business, a) whether the fund raising plan for such telecommunications business by the applicant is drafted in a rational manner, b) whether the repayment plan for such telecommunications business by the applicant is drafted in a rational manner, c) whether necessary chief telecommunications engineer are supposed to be appointed in accordance with Article 3 of the 'Regulations for Chief Telecommunications Engineer', by the commencement of telecommunications business. 2. Regarding reliable and feasible business plan, a) whether the applicant's estimated revenues and expenditure are calculated in a proper and clear-cut manner, and whether these estimates are drafted in a rational manner, b) whether the procurement of land sites, buildings and other plants for establishing telecommunications facilities can be expected, c) whether the applicant's plan for establishing telecommunications facilities and for delineating the area of operation are stipulated appropriately. 3. Regarding entry into the telecommunications business should be appropriate for the sound development of telecommunications, whether the applicant's commencement of telecommunications business impedes fair competition, and also whether the healthy development of telecommunications is promoted in line with the objectives of the law without detriment to the interests of the users and the benefit of the public.

26. They are Councillor's office on Internal Affairs of Cabinet Secretariat, Fair Trade Commission, National Police Agency, Economic Planning Agency, Ministry of Justice, Ministry of Foreign Affairs, Ministry of Finance, Ministry of Health and Welfare, Ministry of International Trade and Industry, Ministry of Transport, Ministry of Posts and Telecommunications and Ministry of Construction.

27. This refers to companies such as electricity companies, water companies, etc., that have ducts or rights of way owing to the nature of the services they provide.

28. While the fee for using one NTT pole is fixed at 1 600 yen per year, the fee for using NTT's conduits is calculated individually. In terms of electric utility companies, they calculate the fees individually.

29. There is no standard processing period for facility sharing.

30. The NTT Law prevents NTT from providing CATV service.

31. The interconnection obligation of Type 1 carriers can be exempted when:

- there is concern regarding the smooth delivery of telecommunications services;
- there is concern that the interconnection may materially impair the interest of Type 1 telecommunications carrier;
- legitimate reasons are provided by applicable MPT ordinances except for the cases specified in the preceding two cases.

32. More specifically, the scope of major designated facilities covers designated subscriber line transmission facilities, and intra-prefecture facilities for telephone, ISDN and leased lines (MPT notice No. 674, 24 December 1997).

33. Six standard points of interconnection are:

- subscriber line end;
- transmission equipment for access line;
- transmission equipment for local switch;
- transmission equipment for signalling tandem switch;
- transmission equipment for tandem switch;
- transmission equipment for tandem leased-line node equipment;

34. There are eleven unbundled functions:

- subscriber line transmission;
- local switching;
- ISM switching;
- local transmission;
- tandem switching;
- interoffice transmission;
- signal transmission;
- directory assistance service access;
- directory database access;
- operator assistance service;
- public telephone origination.

35. By the Interconnection Accounting Rules and Interconnection Cost Calculation Rules, the following costs are included in the interconnection charges:

- sales costs (interconnection-related only);
- operation costs;
- facility maintenance costs;
- common management costs;
- R&D costs (infrastructure-related only);
- fixed-asset retirement costs;
- depreciation costs;
- taxes and public dues;
- borrowed capital costs;
- equity capital costs;
- taxes related to profits.

36. Access charge = charge proportional to number of calls + charge proportional to time (cost of interconnection charges corresponding to traffic).

37. Network modification charge = annual charge (settled by calendar month).

38. *Communications Outlook 1999*.

39. According to the Radio Law, a license is given on a first-come first-served basis. After receiving an application, the Minister examines whether the application satisfies: 1) conformity of the construction design to the technical standards; 2) feasibility of frequencies being assigned; and 3) conformity of other particulars to the essential standards for the establishment of a radio station. When the application meets all requirements, the Minister gives the applicant a pre-permit. When a carrier with a pre-permit completes the construction of a radio station, the Minister grants a license based on its inspection of the radio equipment, the qualifications for radio operators as well as number of operators, timepieces and documents.

40. *Keidanren*, "Problems in Promoting Competition in the Information Communication Market" 1996.

41. According to "The Basic Guideline for Introducing the Third Generation Mobile Communications System (IMT 2000)", Japan will introduce IMT 2000 service in 2001. Three licenses will be granted based on applications from all interested parties. However, operators owning local telecommunications networks cannot provide IMT 2000 service by themselves.

42. Number portability is the term used to describe the ability of customers to retain their telephone number if they change service supplier.

43. Main points of the report:

- Coverage of carrier pre-selection: domestic and international calls originating from networks of regional NTT companies, except for those calls destined for cellular/PHS phones.
- Service categories: Local (intra-city) calls, inter-city calls within a prefecture, inter-prefecture calls and international calls.
- Registration method: It is required for users to register their carriers of choice to the regional NTT company. If not, they are regarded as having chosen NTT by default.

44. For example, the United States includes discounts to assist schools and libraries to connect to the "Information Superhighway" together with fixed voice telephony services.

45. The Study Group for Research into Universal Services and Rates in the Multimedia Age, chaired by professor Emeritus Yukihide Okano of the University of Tokyo, submitted its report to MPT on 31 May 1996. This study group was formed in October 1994.

46. The above-mentioned study group recommended a universal service fund as a mechanism to ensure access to multimedia services for Japanese society.

47 According to the definition of Japan's reference paper in the WTO agreement on basic telecommunication services, the regulatory body is separate from, and not accountable to, any supplier of basic telecommunications services. The decisions of and the procedures used by regulators shall be impartial with respect to all market participants.

48. In October 1997, FTC ordered Tohoku Cellular to remove restrictions on the indication of price on mobile phone handsets. In November 1997, FTC ordered mobile companies (NTT DoCoMo, Tokyo Digital Phone and TU-Ka Cellular Tokyo) to remove price restrictions on mobile phone handsets.

49. For example, the US Telecommunications Act requires FCC to have biannual review on its regulation.