

Section 2 1985 to 1995: Development of Communications and Broadcasting Markets and Appearance of New Services

From 1985 to 1995, the foundation of the information society was built around the Internet thanks to the flow of technologies, human resources and funds from the military sector to the private sector as “peace dividend” of the end of the cold war and the opening of the Internet to the private sector. In Japan too, there were activities toward the provision of diverse telecommunication and broadcasting services through increased competition in the telecommunications market and the advancement of broadcasting services. We name the period from 1985 to around 1995 the “Development of Telecommunications and Broadcasting Markets and Appearance of New Services” and give an overview of the situation of the ICT sector during the period.

1. International Situation and the Trends Outside of Japan

In 1989 the Berlin Wall, a symbol of the cold war, fell, and the cold war structure based on east-west confrontation that had dominated the international community since the Second World War ended, and the world entered a new era. The European Union (EU) was established in 1993 and the strengthening of telecommunications in EU was recognized as one of the important requirements to complete a market where people, goods, services and capital move freely.¹² The 1994 termination of the Coordinating Committee for Multilateral Export Controls (COCOM),¹³ which had restricted economic activities between the East and West, developed an environment to globally enable free transactions in various sectors including ICT. Furthermore, China transitioned to a market-oriented economy and actively promoted the introduction of foreign investments. This nurtured an environment for China to become a major force in the global economy later.

The end of the cold war made it easier to divert the results of R&D by defense expenditure to the private sector. In addition, it was notable, particularly in the United States, how human resources and funds of the military sector flew into the private sector and such flow

gave rise to **innovation** through vigorous R&D investment. The **development of information technologies**, including computers and the Internet, first triggered by R&D in the military sector, can be regarded as a peace dividend that was brought about by the shift of technology resources to the private sector following the end of the cold war structure.¹⁴

The Internet originated from the Advanced Research Agency Network (ARPAnet), the research for which started in 1967 with funds provided by the U.S. Defense Department during the cold war. At first, it was a connection tool used by computer scientists, but it was later made open to researchers in general and its convenience came to be known to private businesses as well. At that time, the US government presented the direction of commercial use of Internet in the NII (National Information Infrastructure)¹⁵ Program, **and the Internet was opened to the private sector**. Thanks to the resulting general commercial use of the Internet, together with the technology innovations of personal computers and the Internet, **informatization progressed rapidly**.

2. Trends in the ICT sector of Japan

During this period, competition developed in the fixed landline communication market of Japan, while mobile phone services started to gradually spread. In addition, communication using personal computers, whereby data is exchanged over telephone lines, started to rapidly spread.

With the opportunities offered by the liberalization of the telecommunications market in 1985, long-distance, regional, satellite and international telecommunications markets became competitive with the entry of new operators into those markets. For example, three compa-

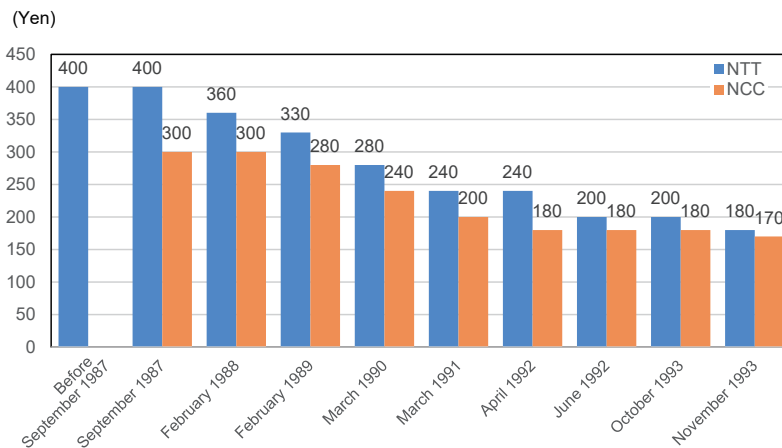
nies entered the long-distance telecommunications market, and this led to fierce price-cutting competition, especially in the Tomeihan Market, which connects Tokyo, Nagoya and Osaka, and was the largest market in Japan. Active new entries into the market saw the lowering of charges, **especially in long-distance call services**: charges for long distance telephone calls, which were 400 yen for three minutes in 1985, fell to 170 yen in November 1993 (**Figure 1-2-2-1**).

¹² See 1995 Communications White Paper, Part 3 Chapter 1 Section 2. <https://www.soumu.go.jp/johotsusintokei/whitepaper/ja/h07/html/h07a03010201.html>

¹³ The committee was established by capitalist countries in Autumn 1949 and started its activities in January 1950 with the aim of regulating exports of high-tech goods to communist countries in order to establish a technology gap with communist countries to address security threats by the Soviet Union and the Warsaw Treaty Organization during the cold war.

¹⁴ SHINOZAKI, Akihiko (2003) “Economic Impact of the Information Economy: Comparative Studies of Japan and the U.S.” Chapter 4 Sections 4 and 5, and Internet Association Japan, “Internet White Paper 1996” Section 1 <https://iwarchives.jp/files/pdf/iwp1996/iwp1996-ch02-01-p036.pdf>

¹⁵ In the United States, the Clinton administration promoted informatization. The initial “Information Super Highway Concept” advocating construction of an optical fiber network by the government was changed to the promotion of private investment and market competition, which pushed the spread of the internet open to the private sector. In the background there was criticism by the communications industry toward government interventions and difficulties with measures involving huge government spending when the 1993 Gramm-Rudman deficit-reduction law was enacted. The National Information Infrastructure: Agenda for Action paper, which was released in 1993, assigned the government a complementary role including cutting-edge experiments, securing of fair competition and infrastructure development.

Figure 1-2-2-1 Transitions in charges for long distance telephone calls¹⁶

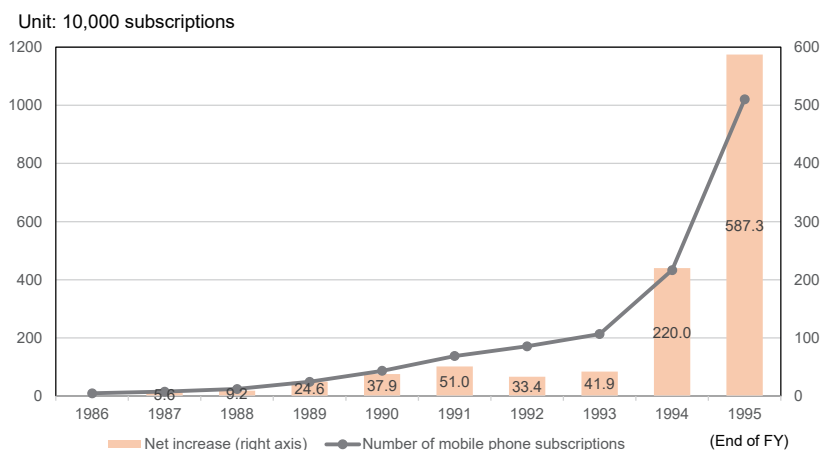
(Source) Prepared from NTT (1996) "10 years of NTT from 1985 to 1995: an overview of its history"

While competition intensified in the fixed-landline communication market, **competition gradually progressed in the mobile communication market.** Mobile phone services were only provided by NTT for a while after communication liberalization,¹⁷ but two new business operators (mobile NCCs) entered the market and NTT was in competition with one or the other in each region. Specifically, IDO Corporation started to provide services in the Kanto/Tokai regions in 1988 and DDI Cellular Group gradually began to provide services in other regions, starting from Kansai in 1989 to Okinawa in 1992.¹⁸ Mobile phones continued to be miniaturized. In 1991, NTT launched the "mova" series, the

smallest mobile phone in the world at that time, and digital services (2G) started in 1993.

The number of mobile phone subscribers increased after communication liberalization partially due to the effect of new entries into the market, but hit a ceiling for a while in the early 1990s (**Figure 1-2-2-2**). However, the Ministry of Posts and Telecommunications introduced a system allowing people to purchase and own mobile terminals (previously they were only rented) in 1994, and manufacturers competed to offer terminals attractive for users, the number of subscriptions exceeded 10 million in 1995, and this prepared the way for the rapid growth of mobile phone services.

Figure 1-2-2-2 Transitions in the number of mobile phone subscribers



(Source) Prepared from 1997 Communications White Paper¹⁹

¹⁶ NCC (New Common Carrier) is the generic name for former Type 1 Telecommunications Operators who entered the market following communication liberalization in 1985.

¹⁷ Mobile communication services were separated from NTT in 1992 and a new company named NTT Mobile Communication Network Inc. (currently NTT DOCOMO) started operations.

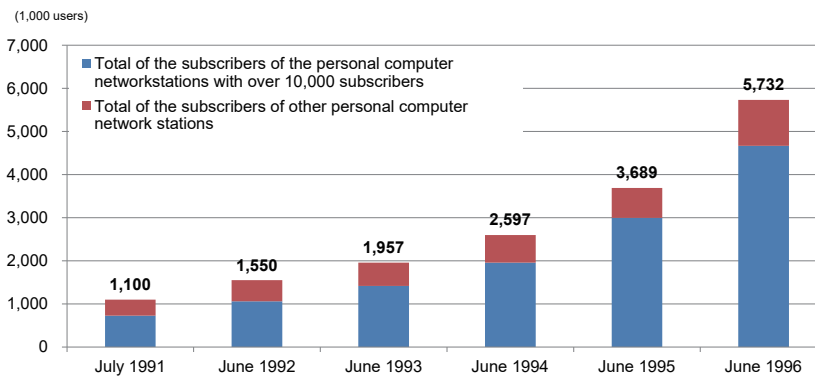
¹⁸ In 2000, IDO Corporation (IDO), DDI Group and Kokusai Den Shin Denwa Co. Ltd. merged to establish KDDI. Digital Phone Group and TU-KA Group launched mobile phone services (in Kanto Koshinetsu, Tokai and Kansai) in 1994, established a joint venture (Digital TU-KA Group) in 1996 and started mobile phone services in other regions. Later, the venture was acquired by SoftBank in 2006 after the acquisition by J-Phone and Vodafone. Through these processes, the 3-company structure of NTT DOCOMO, KDDI and SoftBank was established. Later, the entry of Rakuten Mobile into the mobile phone market in 2020 created more competition in the market.

¹⁹ <https://www.soumu.go.jp/johotsusintokei/whitepaper/ja/h09/html/h09a01010101.html>

In the first half of the 1990s, before the Internet became widespread, a large number of people used **personal computers communication services** connected to carrier computers via telephone lines or ISDN. The number of users rapidly increased from 1.10 million in 1991 to 5.73 million in 1996 (**Figure 1-2-2-3**). Personal computer communication was mostly text-based, including emails, forums and chat, but this paved the

way to data communication in addition to voice communication. It represented a big turning point for the communications industry, which had once focused on voice calls, to shift to the Internet, which spread later. In Japan, Internet Initiative Japan Inc. (IIJ) had already started business as an internet service provider in the first half of the 1990s.

Figure 1-2-2-3 Changes in the number of users of personal computer communication



(Source) Prepared from the 1997 Communications White Paper²⁰

During this period, the **diversification of services** progressed in the broadcasting market. NHK **started BS broadcasting** using Broadcasting Satellites in 1989, and this was followed by Japan Satellite Broadcasting Inc. (currently WOWOW) in 1990. In 1992, **CS broadcasting began** using Communication Satellites (CS).

The government also implemented policies to encourage media companies to move toward multi-channels.

For example, toward the 21st century, the **High-Vision City Concept**²¹ was promoted to build cutting-edge cities full of energy and charm while taking advantage of regional characteristics by pioneering the introduction of advanced video media in urban living spaces. The Ministry of Posts and Telecommunications designated 13 regions as model cities in March 1989, and a further 35 regions were designated at the end of fiscal 1992.²²

²⁰ <https://www.soumu.go.jp/johotsusintokei/whitepaper/ja/h09/html/h09a01010502.html>

²¹ See 1989 Communications White Paper, Chapter 1 Section 4

<https://www.soumu.go.jp/johotsusintokei/whitepaper/ja/h01/html/h01a01040501.html>

²² See 1993 Communications White Paper, Chapter 2 Section 3

<https://www.soumu.go.jp/johotsusintokei/whitepaper/ja/h05/html/h05a02030102.html>