

3 Info-communications Networks

1. Backbone Networks

1.1 Overview

In April 1999, KDD inaugurated operations of its 100 Gbps “Japan Information Highway” (JIH) fiber-optic submarine cable, an element of the domestic telecommunications network that interfaces with a high-speed international network, thus ushering in a true “high-speed network era” for Japan. On the international front, laying of the APCN2 submarine cable, which will use dense wavelength division multiplexing (DWDM) technology, began in June 1999. When completed, this cable will connect to the China–US and Japan–US cables, also currently under construction, thus providing greater capacity for handling the increase in Asia-to-US telecommunications demand that is forecast.

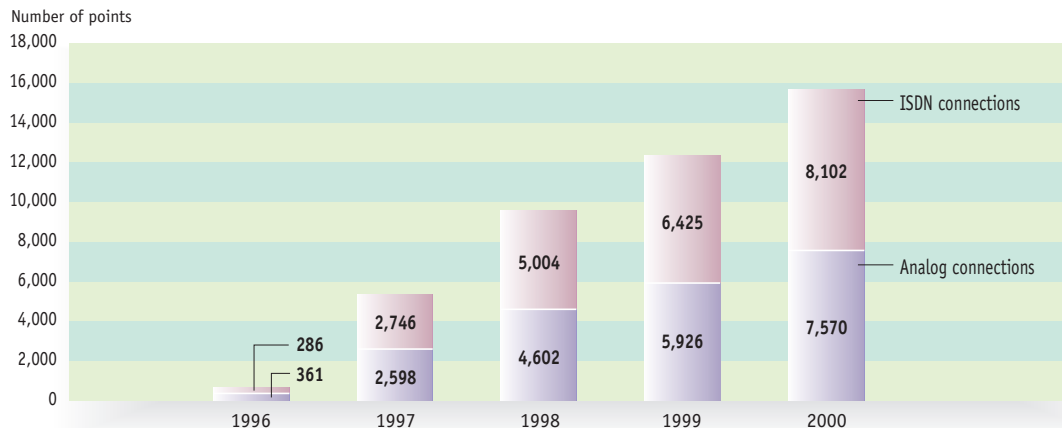
1.2 Internet Protocol (IP) Networks

Internet traffic is surging thanks to the growing popularity of this medium in Japan. Indeed, the number of access points has increased more than 20-fold between 1996, when the Internet had been widespread among ordinary households and other individual in Japan, and 2000 (Exhibit 37).

2. Subscriber Networks

Until recently, subscriber networks, which are used to access the public telecommunications network, consisted primarily of telephone circuits. With the rise of the Internet penetration over the past several years, however, demand for high-speed data transmission has arisen, engendering diversity in subscriber networks, including high-speed access services made possible by

Exhibit 37. Trends in the Number of Available Internet Access Points



Note: Figures for ISDN connections are the total number of access points allowing speeds of at least 38,400 bps. Figures for analog connections are the total number of access points allowing speeds of at least 14,400 bps (for 1996) or at least 28,800 bps (for 1997 and later).

Source: Impress Corporation.

digital subscriber line (DSL) technology and subscriber wireless access systems.

3. Mobile Telecommunications

The penetration rate of cell phones (portable and automobile) is highest in Tokyo prefecture, at more than 50 phones per 100 people. As of the end of fiscal 1998 there were no longer any prefectures with a penetration rate of less than 20 cell phones per 100 people; only a year earlier, there were 15 such prefectures. Miyagi prefecture has the highest Personal Handyphone System (PHS) penetration rate, with about one handset per 10 people.

4. Satellite

As of the end of fiscal 1999, Type I telecommunications carriers were using nine satellites in geostationary orbit and 275 transponders to provide domestic services and 24 such satellites and 797 transponders to provide international services. In February 2000 the Superbird B2 satellite, which succeeds the Superbird B and provides domestic services, was successfully launched. There were three broadcasting satellites in orbit as of the end of fiscal 1999.

5. Radio Stations

There were 46,971,542 radio stations; excluding PHS handsets, cordless telephones, and other terminals not requiring a license at the end of fiscal 1998, up 19.0% year over year. This strong increase was due to the growing popularity of

cell phones (classified in the "land mobile station" category, which numbered 43,809,334, up 21.0%) and an ongoing increase in the number of base stations (to 784,616, up 7.7%).

6. Terrestrial Broadcasting

The number of community FM broadcasting stations has increased since January 1992, when a community broadcasting system was created, reaching 131 at the end of fiscal 1999.

7. Cable TV

There were a total of 69,542 cable TV facilities in Japan at the end of fiscal 1998, up 1.9% year over year. This total breaks down by scale as follows: approved facilities, 1,902, up 1.0%; facilities with notification, 36,113, up 1.8%; small-scale facilities, 31,527, up 2.1%. Some 1,030 of the facilities provided original programming, up 5.9%, while the remaining 68,512 provided retransmitted programming, up a relatively small 1.9%.

8. The Postal Network

Post offices are found in every municipality in Japan to ensure equitable service for all. At fiscal 1999 year-end there were 24,768 post offices, 175,563 mailboxes, 151,482 postage stamp sales agencies and revenue stamp sales agencies, and 83,667 Yu-pack (parcel post) agencies (figures for all but the number of post offices are preliminary). The number for each of these categories increased year over year.