3 The Info-communications Network Infrastructure

1. Development of Network Infrastructure

1.1 Building Next-Generation Networks

From January 1999 the MPT has convened an Executive Meeting on the Next-Generation Info-communications Infrastructure Initiative to (1) develop an image of next-generation networks at the beginning of the 21st century and an overview of the applications, content and products that will be developed over these networks, and (2) study ways in which the environment can be prepared to ensure the construction of infrastructure for high-speed, low-fee networks and the realization of services to be provided over the networks. The group compiled a report in June 1999. Based on this report, the MPT is studying measures to ensure flat-rate, constant connection Internet services; flexible network connections; and the popularization of Internet applications such as e-commerce, as well as ways to facilitate the construction of next-generation networks by private-sector companies.

1.2 Promotion of a Nationwide Fiber-Optic Network

Compared to the common coaxial cable, fiber-optic cables enable high-speed broadband transmission, and their use results in a minimal amount of data loss. As such, fiber-optic communications networks are expected to serve as a core component of the nation's infrastructure in the 21st century. As of the end of fiscal 1999, Japan's fiber-optic network covered about 36% of Japan's regions, and the proportion is steadily growing (Exhibit 48).

1.3 Promotion of a Wireless Access System

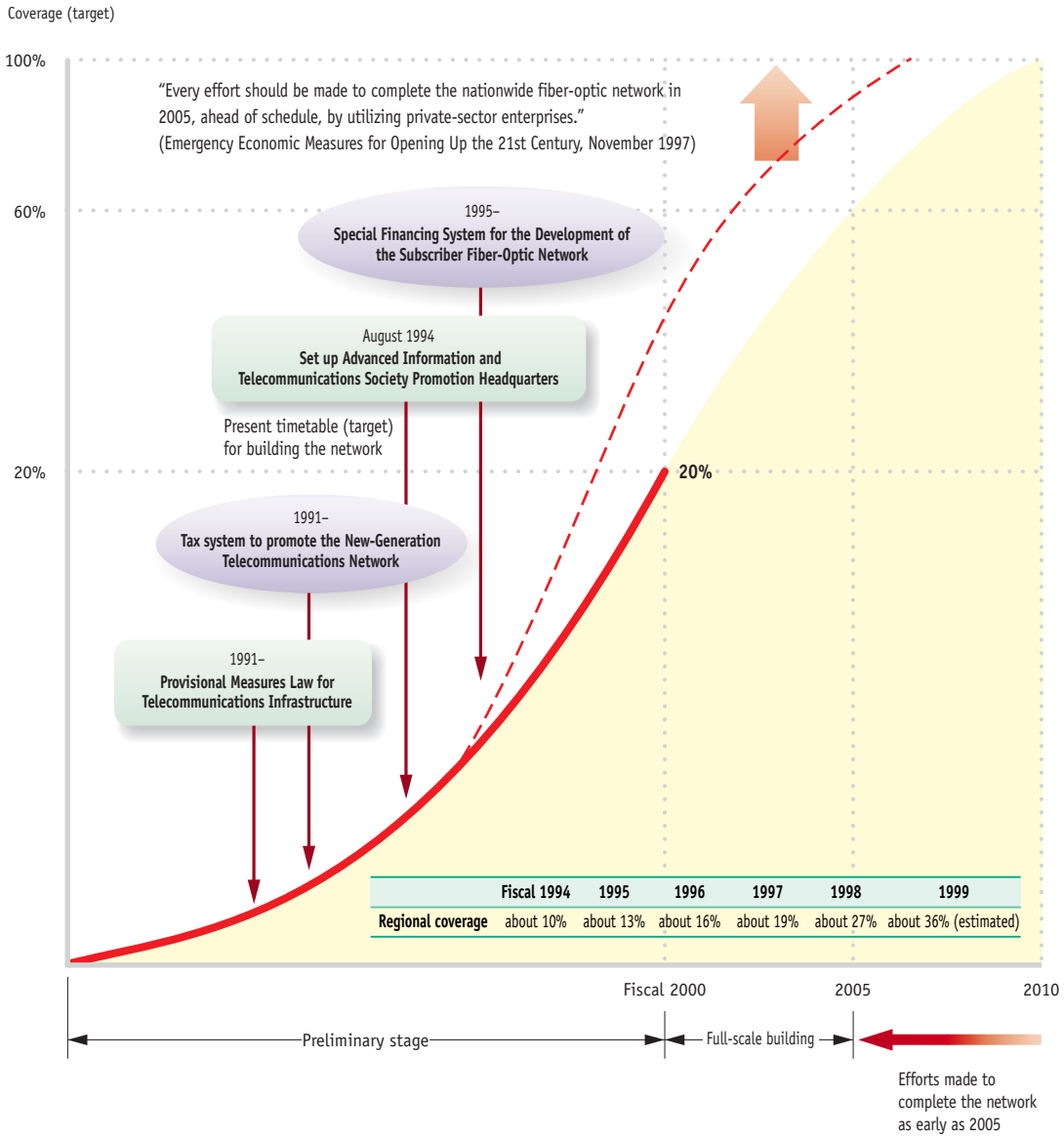
Wireless access systems—systems that allow for broadband communications via direct, wireless connections between individual subscribers (home and offices) and telecommunications carriers' circuits—have been the subject of great interest, in part because of the relative low cost and ease with which facilities can be constructed. Subscriber wireless access systems, in particular, have the potential for reducing carriers' initial costs significantly. They are also expected to enhance competitiveness in the regional telecommunications markets where currently either NTT East or NTT West provide the only connections to the telecommunications network.

2. Correcting Information Differentials

2.1 Regional Differentials in Cell Phone (Portable and Automobile) Services

In fiscal 1991 the MPT inaugurated a Project for Construction of Transmission Towers for Mobile Telecommunications designed to rectify differentials in cell phone services in depopulated regions in which private-sector carriers were considered unlikely to correct the

Exhibit 48. Timetable for Development of Japan's Fiber-Optic Networks



situation on their own initiative. As of the end of fiscal 1998, 237 pylons had been constructed.

2.2 Geographic Differentials in Broadcasting

In regions in which topographical factors make terrestrial broadcasting reception difficult, the MPT has been providing local governments with financial support via its Project for Ensuring Equal Access to Info-communications Infrastructure and its Project to Support Construction of Satellite Broadcasting Receiving Facilities.

3. Enhancing the Safety and Reliability of Info-communications Networks

3.1 Preventing Major Accidents at Telecommunications Facilities

A recent spate of serious accidents in Japan—including an accident at a uranium-processing facility, a failed H-II rocket launch, and the collapse of a concrete structure in a railway tunnel—have had a significant impact on the extent to which the general population trusts technology to be safe and effective. As a result, in December 1999 the government published an "Accident and Disaster Prevention Council Report" that provides guidelines for government ministries and agencies, as well as private-sector companies, on how to determine ways to prevent accidents. Based on this report, both public- and private-sector entities are working out ways to prevent accidents from occurring or recurring.

3.2 Computer Year 2000 (Y2K) Problem

The Y2K problem was recognized as an extremely serious issue in light of the fact that all facets of social and economic activity have become so dependent on computers. As a result, the public and private sectors cooperated extensively in the years leading up to January 1, 2000, to develop ways of preventing potential problems. For its part, the MPT completed the steps necessary to ensure a smooth transition into 2000 in the telecommunications and postal sectors. As a result, no problems affecting people's lives in any significant way arose in the new year.

4. Upgrading Broadcasting Technology and Services

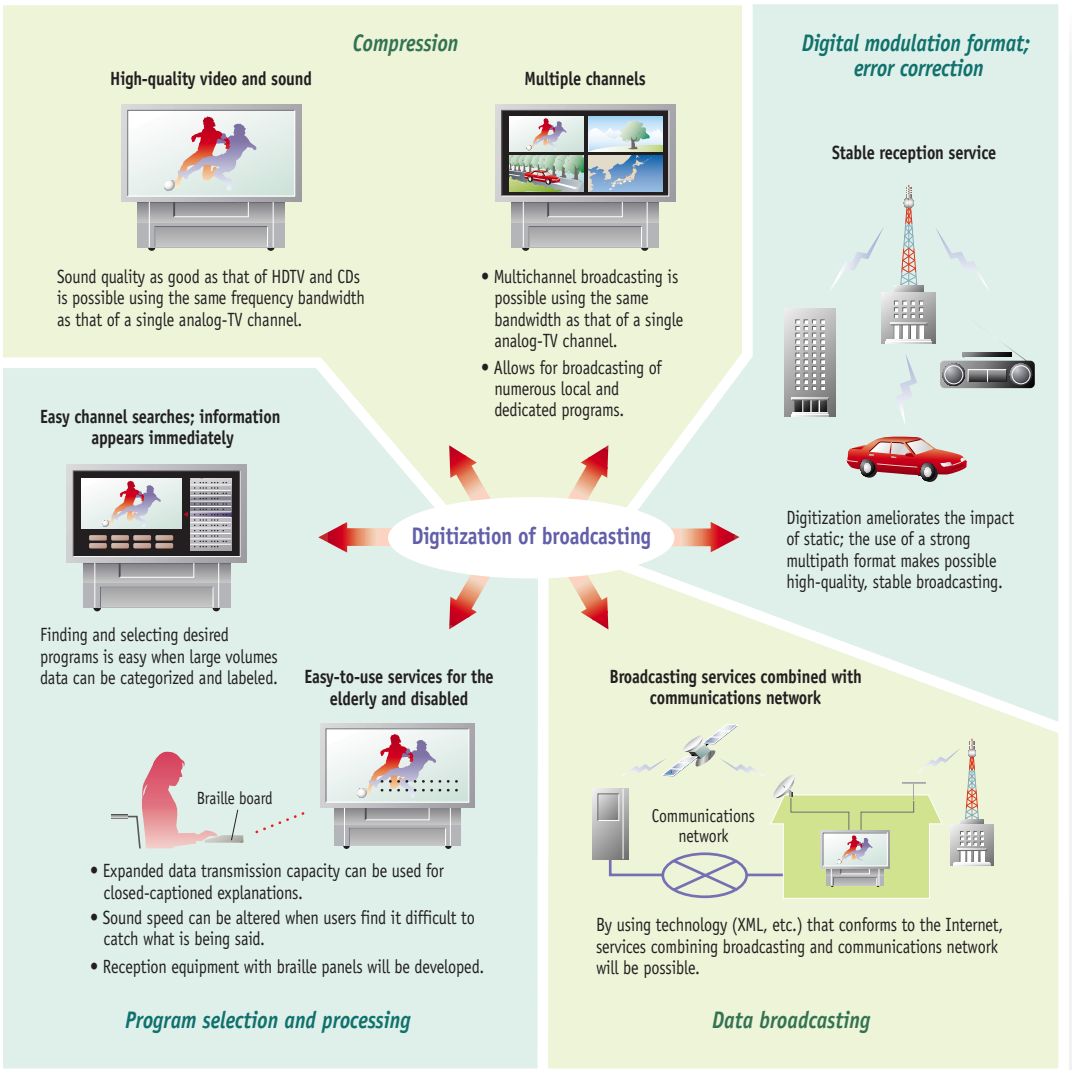
4.1 Laying the Groundwork for Digital Terrestrial Broadcasting

The Advisory Committee on Terrestrial Digital Broadcasting submitted a report to the MPT in October 1998. On the basis of this report, the ministry is encouraging the preparation of an environment that will allow digital terrestrial broadcasting to be inaugurated in Japan's three major markets (Kanto, Chukyo, and Kinki) by 2003 and elsewhere in Japan by 2006. The Telecommunications Advancement Organization of Japan (TAO) is developing new technologies and services, with a view toward making such broadcasting available nationwide ahead of these targets. Ten digital terrestrial broadcasting joint research and development facilities have been built, along with a nationwide relay testing facility joining them. In August 1999, seven of the facilities instituted test broadcasting, with the remaining three doing so in December (Exhibits 49 and 50).

4.2 Digitization of BS Satellite Broadcasting

The Second Launched BS-4 satellite is scheduled for launch in October 2000, with actual digital broadcasting via this broadcasting satellite (BS) to commence on December 1. With a target calling for 10 million households to be subscribing to the service by the 1,000th day of operation, BS broadcasters, related operators, and the MPT are collaborating on ways to encourage public interest in BS digital programming. These include demonstration

Exhibit 49. Benefits of Digitization of Broadcasting

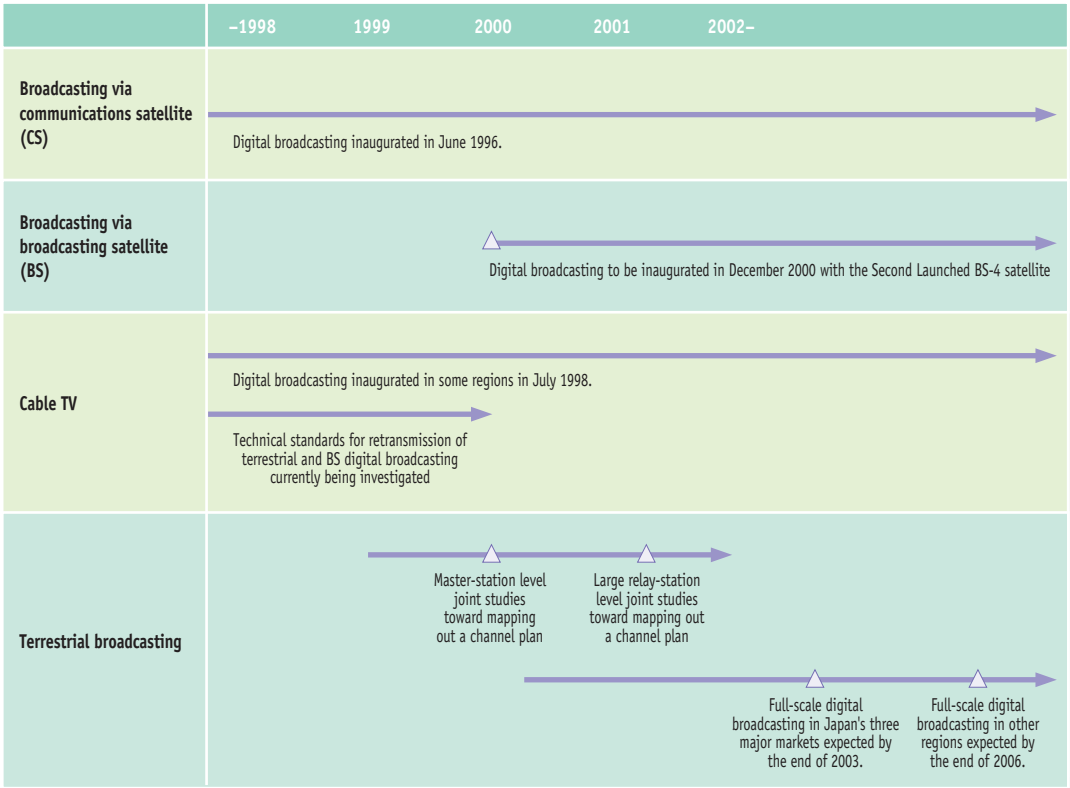


broadcasts of special events, such as the Sydney Olympics in September 2000.

4.3 CS Digital Broadcasting

In August 2000 the N-SAT-110 communications satellite (CS) is scheduled to be launched and positioned at 110 degrees longitude, which is where the Second Launched BS-4 satellite is to be situated. If digital broadcasting via the CS is made available, reception equipment compatible with both BS digital broadcasting and CS digital broadcasting can be developed. The MPT is investigating the feasibility of using the N-SAT-110 for broadcasting, from the standpoints of the benefits that CS broadcasting would bring to viewers and the overall soundness of the broadcasting sector, and is preparing an appropriate system for such broadcasting.

Exhibit 50. Broadcasting Development Timetable



4.4 2.6-GHz Band Satellite Digital Audio Broadcasting

In July 1999 the Telecommunications Technology Council submitted a report to the MPT entitled "Technical Conditions for Satellite Digital Audio Broadcasting Using the 2.6-GHz Frequency Band." Based on the report, the ministry plans to prepare relevant ordinances to commercialize this type of broadcasting and promote the creation of new broadcasting businesses.

4.5 Popularizing Cable TV

In May 1999 the Telecommunications Council submitted a report to the MPT entitled "Policy on Development of Cable Television and Its Future Image: Cable TV in 2010." Based on this report, in September 1999 the ministry created a Study Group on Development of Cable Television to investigate specific measures. The group is scheduled to submit its final report in May 2000.

4.6 Developing Programs Compatible with Advanced Broadcasting Technology

A great variety and volume of broadcast programming will be needed if viewers are to fully enjoy the benefits of multichannel digital programming. During fiscal 1999, the MPT encouraged the laying of the necessary groundwork in program production, distribution, and preservation.