

Comments of the Government of Japan

The Government of Japan expresses its respect to the Government of the United States for the Federal Communications Commission (FCC)'s efforts to establish a national broadband plan, and is pleased that discussions will be held concerning broadband policies and the actions to be taken. The Government of Japan aims to work in concert with the Government of the United States towards establishing a more advanced ICT society both in Japan and the United States, through the exchange of information and opinions and working closely together toward further strengthening our cooperative relationship.

According to the notice of inquiry (NOI) made public by the FCC regarding *a national broadband plan for our future*, the Government of Japan would like to introduce some of our experiences in disseminating broadband services, and make points that may be useful for the said plan.

To begin, high-speed fixed broadband services at low prices have become widely prevalent in Japan (See Appendix 1.). This is one of the outcomes of Japan's policy implementation that is directed at establishing a fair competition environment, which is described in detail below. The Government of Japan continues to aim at further improvements in terms of price, speed, and penetration through optimization of the competitive environment.

Secondly, Japanese experience in implementing the government policies is as follows.

Japan has firstly established successive national strategies since 2001. We have

always set out clear goals concerning the desirable broadband network development and steadily put them into practice, with particular emphasis on establishing the competition environment. Second, as for fixed communications we have been promoting to ensure a competition environment in the broadband market by opening networks, which commenced in 1999. Third, as for mobile communications, the bandwidths for broadband services were secured by streamlining band usage, and we allocated bandwidth for the services in terms of open networks. Fourth, the Government of Japan offered support for areas where the above-mentioned market-based policies are still facing difficulties in delivering adequate broadband services.

Specific details of our foregoing policies are given in the sections below:

1. Establishment and Revision of National Strategies

In January 2001, Japan established the *e-Japan Strategy*, setting out a goal of “Becoming the world’s leading IT-oriented nation by 2005,” and focused on preparation of the Information and Communication Technology (ICT) environment, in particular, strengthening the network infrastructure. One of the targets for a broadband - accessible environment was “providing high-speed Internet to 30 million households and ultra-high-speed Internet to 10 million households within five years.” This was achieved in 2003, only two years after the Strategy was set in motion. In July 2003, with this achievement, we then set out the *e-Japan Strategy II*, which was directed toward promoting the effective usage of ICT for day-to-day activities. In 2006, for these strategies to succeed, the *New IT Reform Strategy* was introduced in an attempt to resolve social challenges through utilizing ICT. One of the main goals set out in this strategy was “propelling deployment of optical fiber and other high-speed networks and

eliminating all *zero-broadband areas* by FY2010.” This is the plan that is currently in action (See Appendix 2,).

Development of broadband policies in Japan is ongoing, and further efforts are being made to improve current services. Our next challenge is to encourage more efficient use of broadband in various areas such as e-government, health care, and education, as part of our social infrastructure. We recognize that it is important to establish a clear vision and put it into practice to respond to the recent economic climate as well as to revitalize the economy through such wide ICT usage. In April 2009, to achieve this, MIC (Ministry of Internal Affairs and Communications) established the *Digital Japan Creation Project (ICT Hatoyama Plan)*, and the Government of Japan set out its *New Strategy for the New Digital Era*. The goals of these current strategies are to accelerate ICT-related investment in all areas in order to achieve an environment where users in Japan realize real affluence, safety, and security with ICT, a reform of the Japanese industrial structure, and a reinforcement of international competitiveness through comprehensive ICT usage.

2. Fixed Broadband Policy

Japan has been working on opening essential facilities for broadband services to encourage broadband development in a fair competition environment. In 1999, local loop unbundling was ensured (for dry copper and line-sharing), and in 2000, collocation rules were established and optical fiber network unbundling were ensured. These policies accelerated the spread of DSL services and led to the rapid start up of FTTH services. In 2009, we also introduced rules to ensure Next Generation Network (NGN) unbundling. We have enforced the promotion of competition to realize the diversity of

interconnection by other operators. The Government of Japan has introduced enforcing policies for interconnection tariffs at proper charges, which has ensured that costs for using infrastructure of broadband have been low, while incentives for facility investment have not been diminished (See Appendix 3.).

A variety of business opportunities in the broadband market was encouraged and the range of consumer options was expanded, allowing the Government of Japan to enable operators to enter the broadband market in Japan without the need for establishing transmission facilities in line with the government policies. This creating of an attractive market achieved an increase in the number of broadband users, together with faster and more affordable broadband services.

3. Mobile Broadband Policies

In order to achieve the optimum usage of the radio spectrum through frequency reallocation to keep pace with technology advancements, since 2002, the government has surveyed spectrum usage, published the results, and evaluated the extent of efficiency in radio spectrum usage taking into account the opinions of the public. To implement frequency reallocation smoothly and steadily based on the results of the evaluation, in 2004, the first *Action Plan for Radio Spectrum Reallocation* was published, which we review and publish every year.

To promote provision of mobile broadband services, the Government of Japan places priority on allocating frequency for operators who establish a plan to open their networks to other operators, such as the Government introduced adjudication to set up plans for MVNOs to use networks in licensing policies for BWA, e.g. WiMAX (in 2007) and for the 3.9G mobile communications system, e.g. LTE (in 2009)(See

Appendix 4.).

Though frequency is a finite and scarce resource, it is essential for the development of mobile communications services. We thus plan and enforce to increase opportunities for entering the mobile broadband market and for activating the market, through establishing and implementing scheme for efficient usage of frequency, and introducing one of the important adjudication to ensure the provision of network to other operators when allocating frequency.

4. Support for eliminating all *zero-broadband areas*

Despite our working tirelessly to set up appropriate goals for national strategies and to maximize the utilization of market mechanisms in disseminating broadband services, there still remain some areas which have difficulties spreading broadband services because of geographical condition, such as isolated islands. To counter this problem, in June 2008, the MIC established the *Strategy on the Digital Divide* and has put it into practice.

The *Strategy on the Digital Divide* has set the goals to eliminate all zero- broadband areas, to increase the ultra-high-speed broadband household coverage to 90%, and to enhance mobile telephone network coverage by 200,000 people, out of the 300,000 people who has been outside the mobile service area, by the end of FY2010.

To achieve these goals, we have set out two sub-goals in terms of promoting the high-speed and ultra-high-speed broadband infrastructures. For the high-speed broadband infrastructure, we are promoting project integration between broadband infrastructure and mobile phone service areas, and developing the environment for usage of satellite broadband. As for the ultra-high-speed broadband infrastructure, we

are providing support for the deployment of optical fiber networks for operators and local governments, and promoting the conversion of cable TV networks to ultra-high-speed broadband networks.

One concrete example of the support mentioned above has been the Grant-in-Aid for Promoting the Local Telecommunication Infrastructure since 2006, which has helped facilitate deployment of the ICT infrastructure in disadvantaged areas, including depopulated areas, outlands, remote islands, peninsulas, mountain villages, areas with heavy snow, Okinawa, and other similar regions. Another example of support has been the Local Intranet Infrastructure Subsidiary since 1998, which has been providing for the building a local public network in each area connecting its respective schools, libraries and town hall in order to upgrade the quality of education, public administration, welfare, health care and disaster prevention in these hitherto disadvantaged areas (See Appendix 5.).

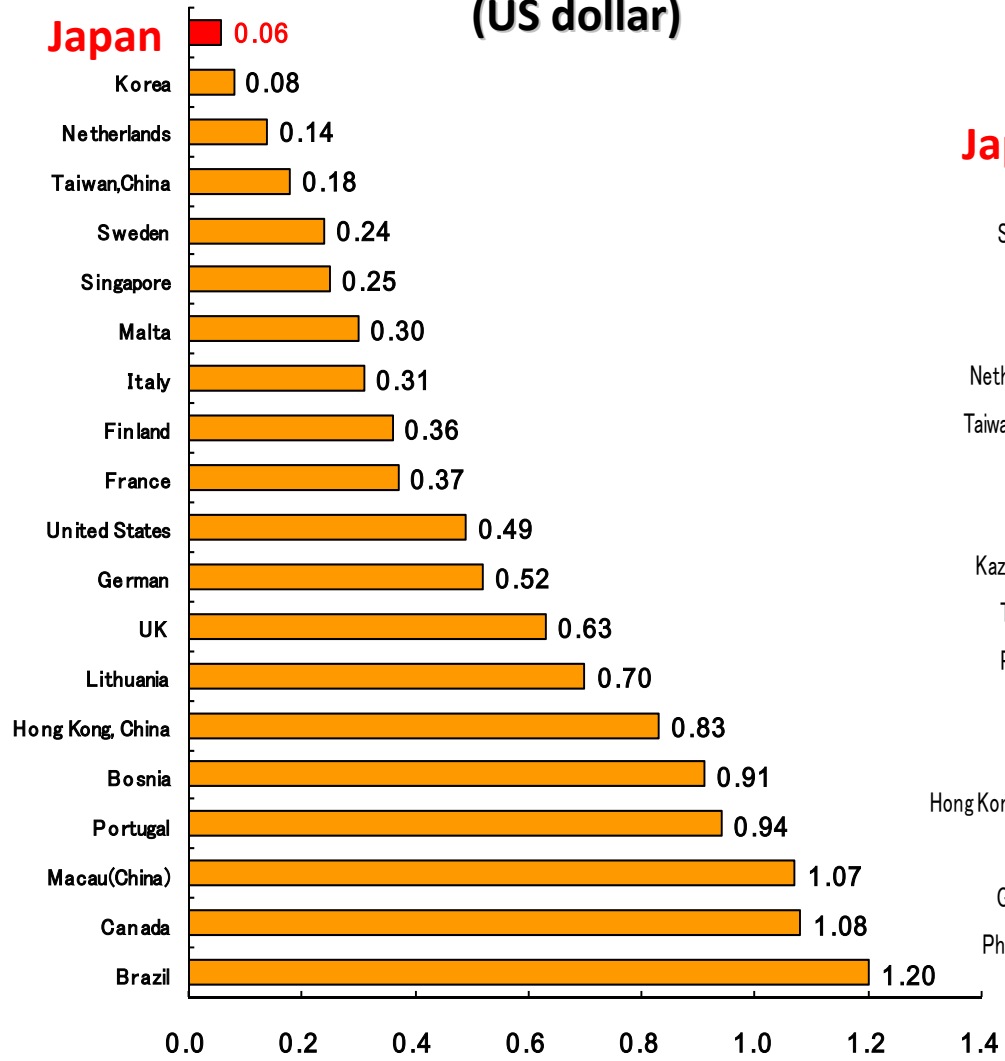
5. Reflecting on our experiences, we recognize that it is important to formulate appropriate goals at the opportune time in planning strategies, and to assess and review such strategies and reset the goals as necessary. Further, we also realize that it is effective to focus on market mechanisms, as well as combine competition policies that offer opportunities for investment to a wide range of parties both inside and outside Japan and support in areas where broadband services are difficult to access.

In concluding, the Government of Japan recommends that the Government of the United States express clearly its national strategy, reinforce competition policies that enable operators to introduce open networks in the fixed and mobile telecommunication

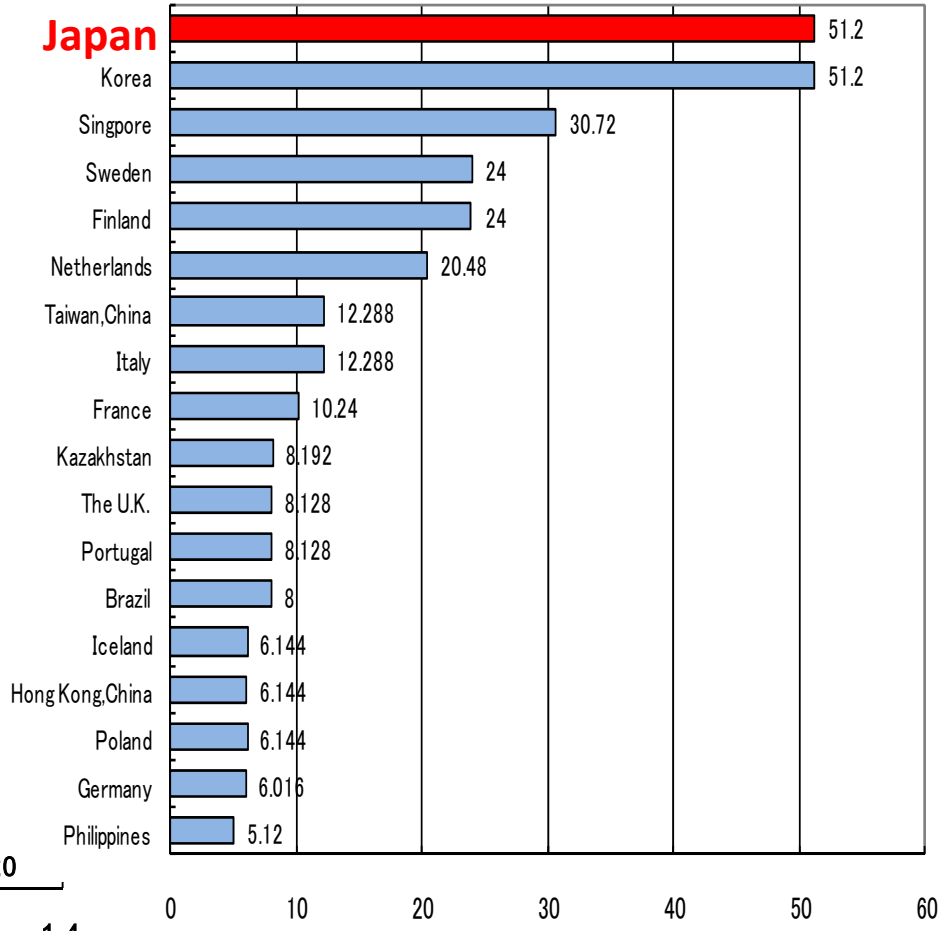
networks, and provide support without impeding fair competition. These should help the prompt deployment of broadband services, and encourage their usage. The Government of Japan would like to further strengthen its cooperative relationship with the public and private sectors, in both Japan and the United States, in order to enable the two nations to enjoy the clearly beneficial results of broadband services as social infrastructure through the implementation of the national broadband plan.

Broadband Services in Global Comparison

Broadband prices (100kbit/s) (US dollar)



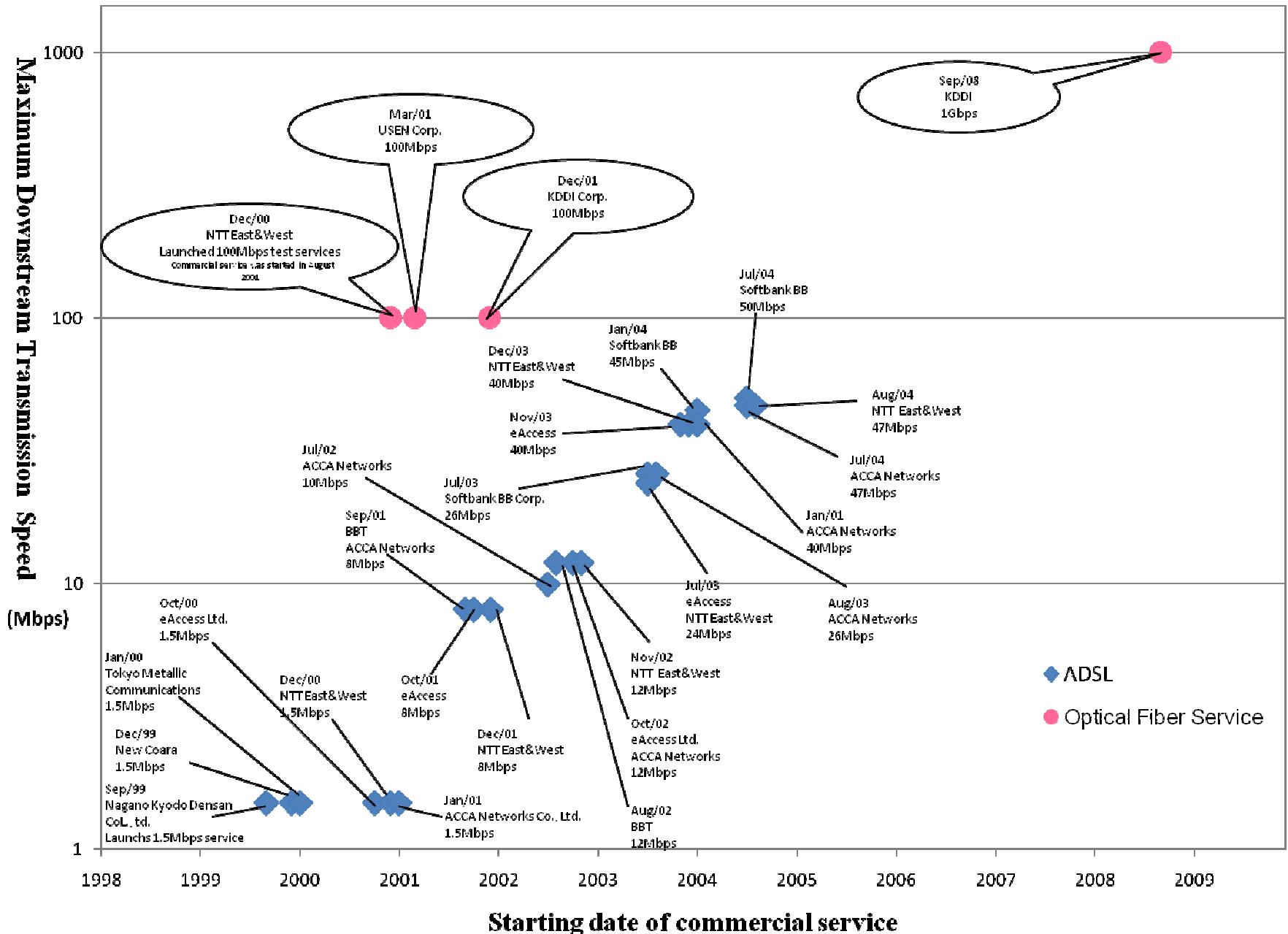
Speed of DSL (Mbit/s)



Source : ITU "World Information Society Report 2007]" (June 2007)

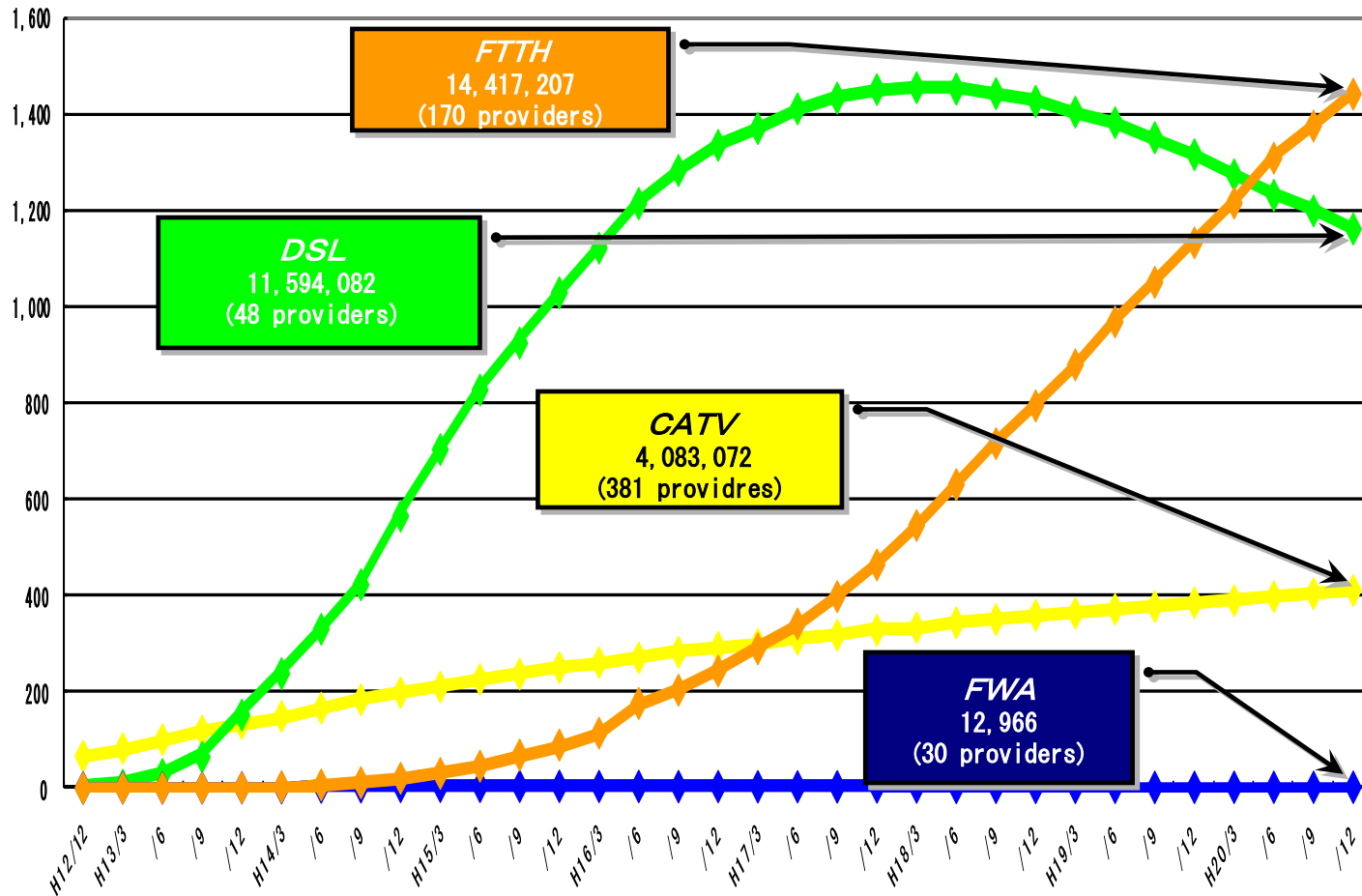
Source : ITU Internet Reports 2006 "digital.life" (December 2006)

Transmission Speed became Higher

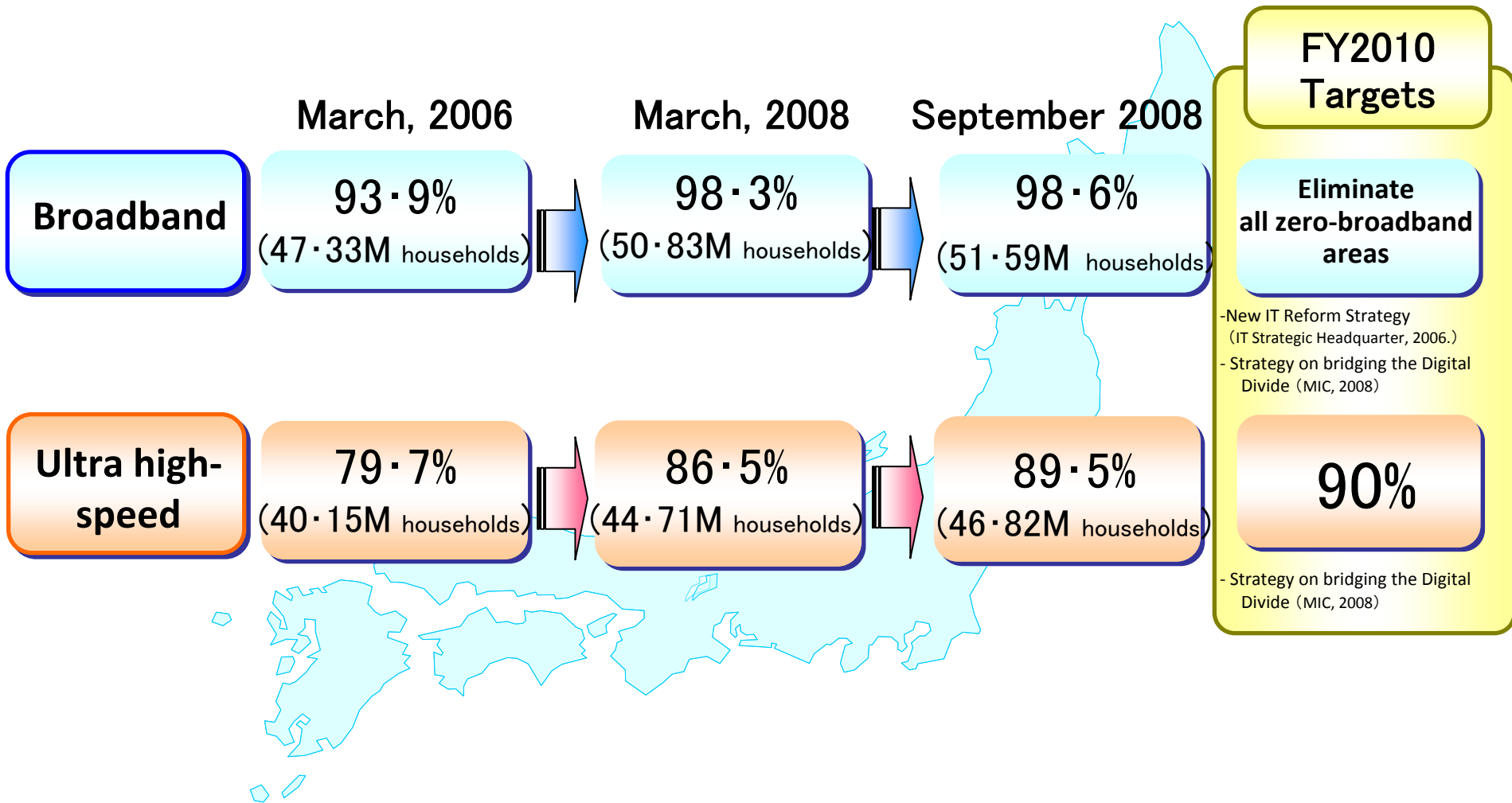


The Number of Fixed Broadband Subscribers

【Number of Broadband Service Users】



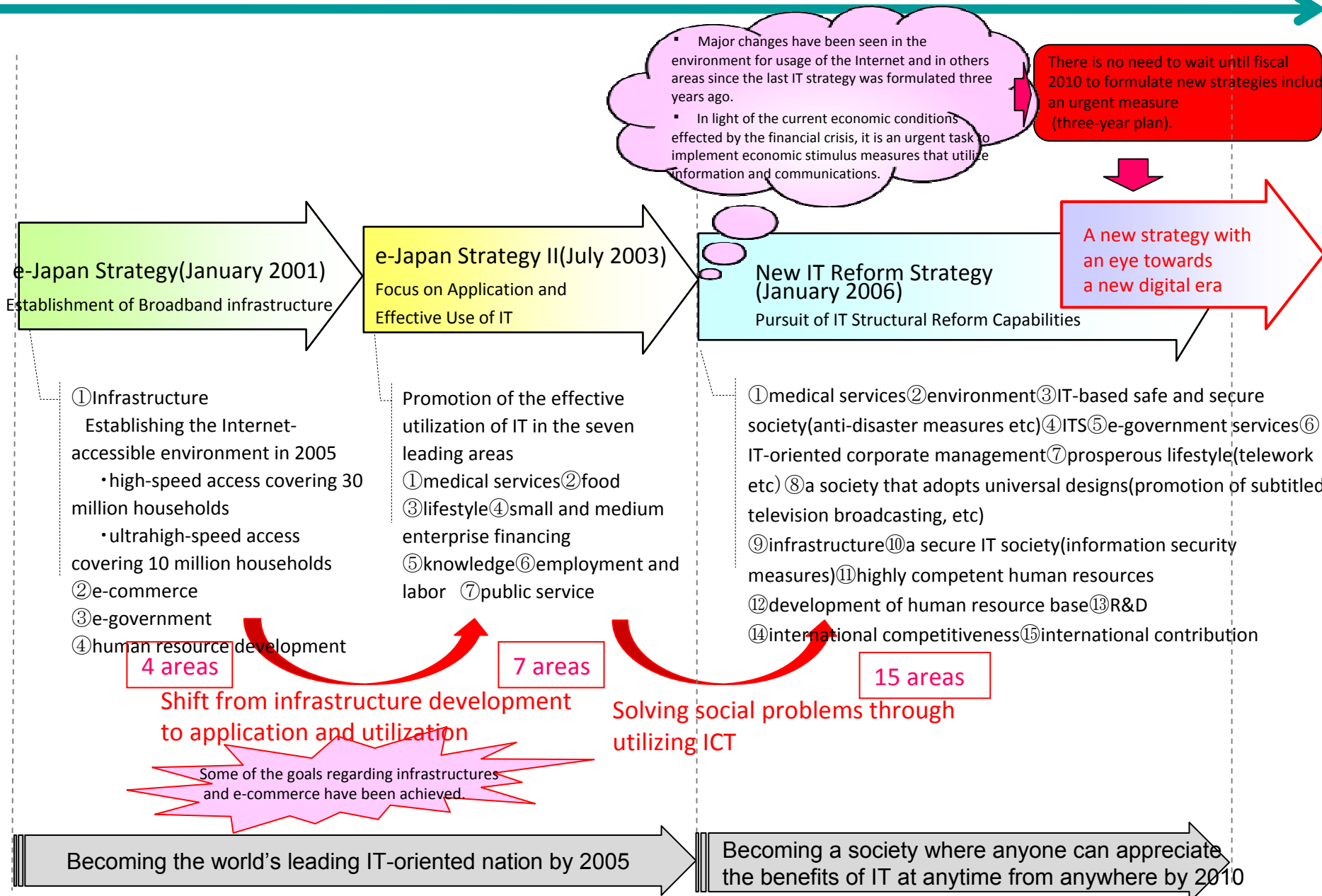
Service Area Coverage Rate of Households



2001~

2006~

~2010



Project to Establish Digital Japan (ICT Hatoyama Plan) Appendix 2-2

Priority items of the project (outline), which are to be intensively implemented in the first three years, were decided and declared. The course of the project was set towards demonstrating Japan's underlying strength through utilizing ICT. In the deliberation for the project, the emergency proposal, "ICT New Deal" (Feb. 23, 2009), presented by the panel of ICT Vision along with other matters, was taken into consideration.

Objectives of this Project

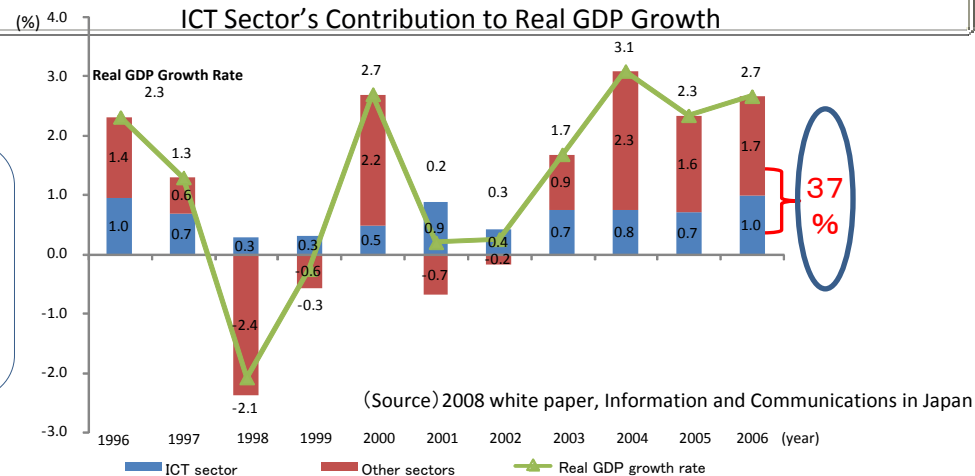
- By giving momentum to ICT-related investment in every possible field,
 - create an environment where citizens (users) can experience prosperity, safety and security, which is realized through utilization of ICT.
 - transform the industrial structure and strengthen international competitiveness of Japan through fully utilizing ICT.

Future effects expected from this project (nine items)

- A short-term effect on the economic recovery through ICT-related investment
 - new markets valued at trillions of yen (based on the cumulative total) are expected to be created over the next three years (generating 300,000 to 400,000 jobs).
- Enhancement of the medium-term growth potential by accelerating and moving up future-oriented investment related to ICT
 - the market size of the ICT industry is expected to double between 2015 and 2020 (creating new markets up to a maximum of around 100 trillion yen).

Reference

The ICT sector (valued at 95.2 trillion yen as of 2006) accounts for around 10% (9.8%) of the overall industries. It positively contributes to the economic growth regardless of whether the economy is in boom or recession. The ICT sector constitutes approximately 40% of the recent economic growth.



Industries are to Demonstrate their Underlying Potential

Creation of New Digital Industry

~ Accelerating the pace to place new technology, in which Japan is strong, into the marketplace ~

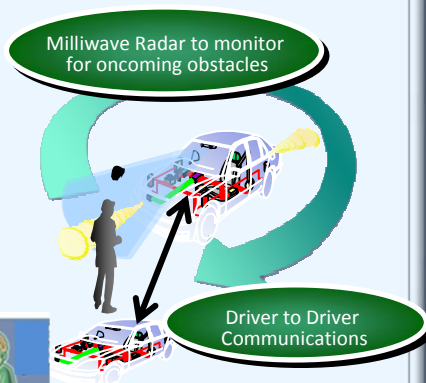
- Speed up R&D to establish technologies related to next-generation wireless communications (which is expected to create new markets the size of several tens of trillions of yen) in the next few years. Specifically, by using the frequencies freed up when analog television goes off the air or the bandwidth that will be reallocated, new technologies will realize a convenient lifestyle environment without power cables, automobiles equipped with a traffic-accident prevention system, and so on.
- Accelerate R&D for innovative network technology that can achieve the world's top level of ultrahigh speed with great reliability and limit energy consumption to a minimum, new 3-D technology that does not require special glasses to see 3-D images, automatic speech translation technology, and so on.
- Examine possibilities to utilize so-called "white space."

Convenient lifestyle environment without power cables



Connecting home appliances with a wireless network (wireless super broadband service) eliminates wiring in a house

Automobiles with devices that prevent collisions



3-D Image



The Government is to Demonstrate its Underlying Potential

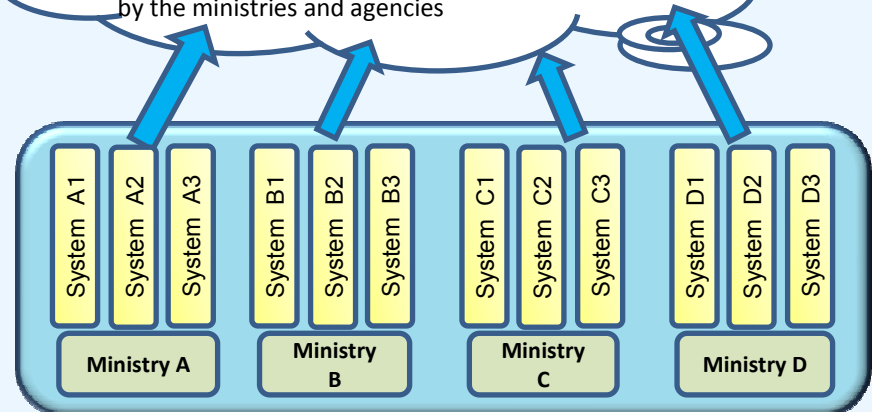
Establishment of Innovative e-Government

~ The government is to take the initiative to introduce advanced technologies and realize efficiencies ~

- Build the "Kasumigaseki Cloud" (tentative name) in phases to be completed by 2015 in order to improve public service (e.g., dramatically cutting costs for constructing and administrating information systems) by utilizing innovative technology (i.e., cloud computing), and reduce burdens shouldered by the private sector by standardizing corporate codes
- Digitize intellectual and cultural assets accumulated in the analog era, which are in the possession of the National Diet Library and the National Archives of Japan, and create a "National Digital Archive" (tentative name) that can be accessible from anywhere in the world, and allow the private sector to join this archive project with an aim to develop new services

Kasumigaseki Cloud

- ✓ No need to maintain each and every system
- ✓ Possible to use only the necessary amount of computer resources
- ✓ Centralize the data centers separately managed by the ministries and agencies



Regions are to Demonstrate their Underlying Potential

Establishment of a Ubiquitous Town

~ Improve local services and support indigenous industries by intensively applying ICT ~

- In light of the “autonomous settlement regions” scheme, connect public institutions of local governments by fiber-optic networks.
- Based on the above infrastructure, improve public service for local residents through telemedicine and distance education systems.
- Promote the establishment of a safe and secure community by intensively applying ubiquitous technology. Specific measures include a monitoring system for school children who commute to and from school; a tourist/direction guidance system; promotion of “public commons for safety and security;” facilitation of “hometown mobile phone projects;” implementation of wide-area facility management projects; establishment of a system for spatial codes as infrastructure.
- Facilitate the establishment of platforms, by utilizing ICT, that support local small/medium enterprises and individual business owners in smoothly conducting joint operations such as procurement, training and marketing.
- Promote the establishment of e-municipalities by renewing information systems to be consistent with regional information platforms.

Development and Facilitation of Creative Industries

- Enhance the capability to distribute local content to users at home and abroad. Facilitate overseas market entry of content business such as Japanese TV programs and animated cartoons, which are highly evaluated by the world.
- Strengthen the distribution of content in the style of convergence/linkage between communications and broadcasting, such as IPTV.
- Facilitate affiliation of cable television networks in a large area.

Strengthening International Competitiveness of the ICT Industry

- Facilitate the “Ubiquitous Alliance Project” (establishing a model system that corresponds to the needs of a partner country), which will give momentum to develop ICT’s three main areas (digital broadcasting, wireless network, and next generation IP network) in international fields.
- Advance discussions to put the “Digital Silk Road” scheme into practice.

Development and Deployment of “Ubiquitous Green ICT”

- Encourage efforts to make the ICT sector more eco-friendly, such as measures to promote the development of energy-saving networks and the establishment of “green cloud data center” (tentative name).
- Promote regional environmental measures that utilize ICT.

Stepping Up Efforts to Nurture Highly-Capable Personnel in the ICT Sector

- Nurture highly capable personnel in the ICT sector, who can generate added value by utilizing ICT (supporting the establishment of a national-center sort of function)
- Promote provision of necessary training for nurturing personnel in the ICT sector

Realizing Safe and Secure Networks

- Advance the safety and security of networks by implementing measures for protecting personal information from leakage, improving security functions, and tackling illegal and malicious information.

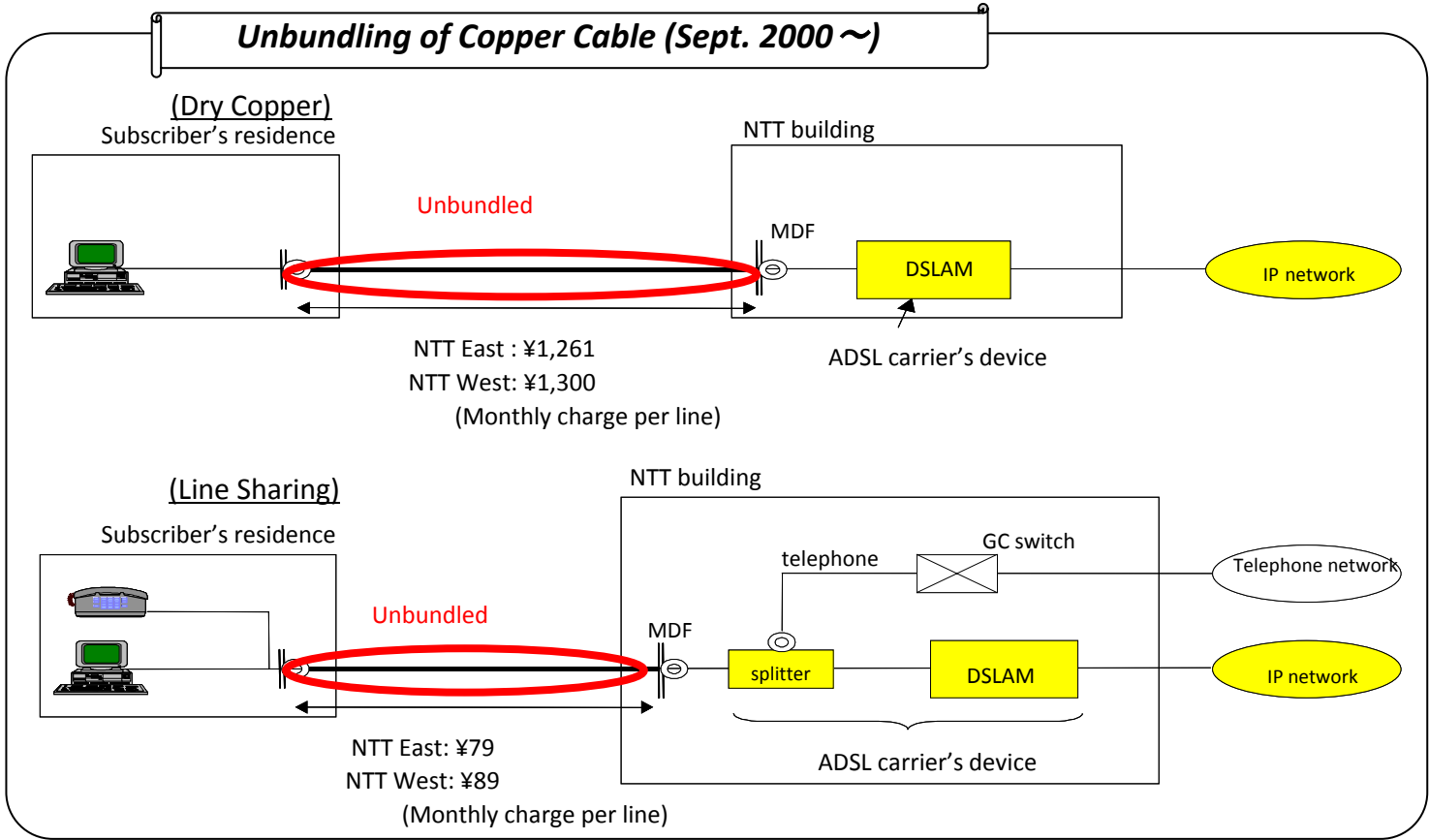
Building Infrastructure That Underpins the Underlying Potentials

Establishment of an Advanced Digital Network

- Promote the elimination of zero-broadband areas (aiming to achieve it by the end of FY2010), and speed up the elimination of no-signal areas for mobile phones.
- Ensure steady progress for the migration to terrestrial digital broadcasting (the complete shift will be fully accomplished in July 2011).

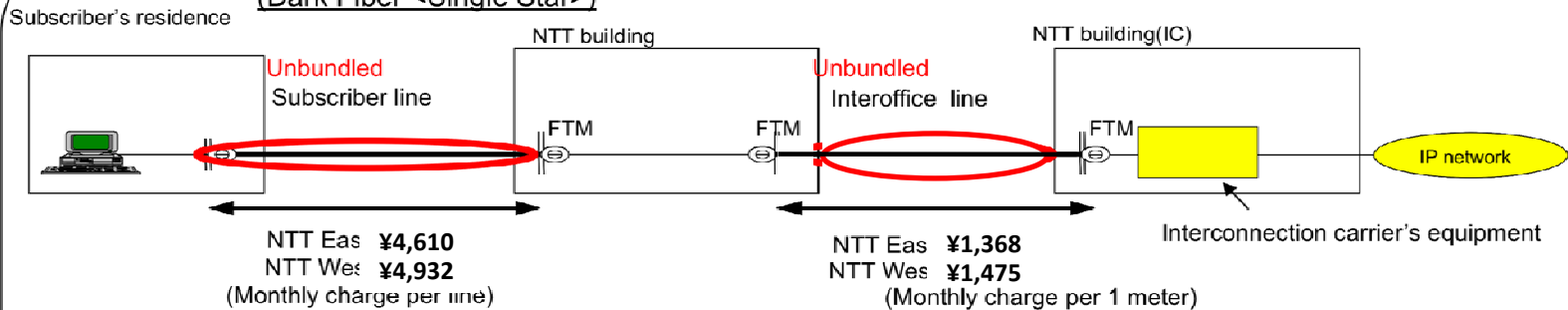
Introduction of UNBUNDLING rules

- ❑ Unbundling is to set the interconnection charges per function. (You don't have to pay for the functions you don't need.)
- ❑ The subscriber lines (Copper Cable and Optical Fiber) and interoffice lines (Optical Fiber) were made to be unbundled for competitive carriers firstly by Administrative Guidance in 1999 and 2000 and then by Ministerial Ordinances in 2000 and 2001.

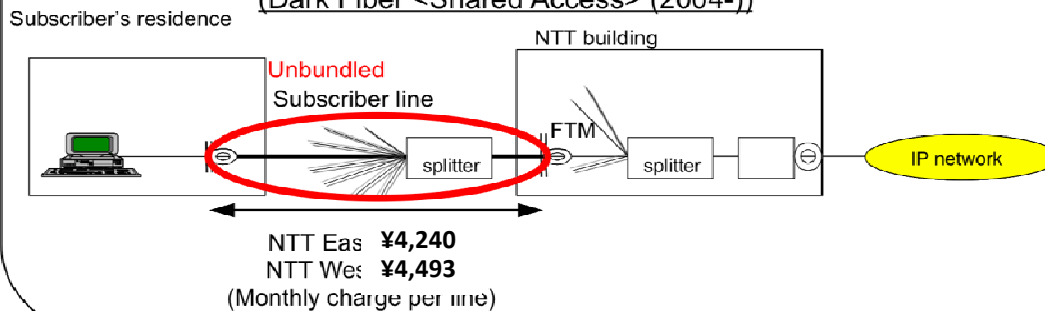


Unbundling of Optical Fiber (Apr. 2001~)

(Dark Fiber <Single Star>)



(Dark Fiber <Shared Access> (2004-))



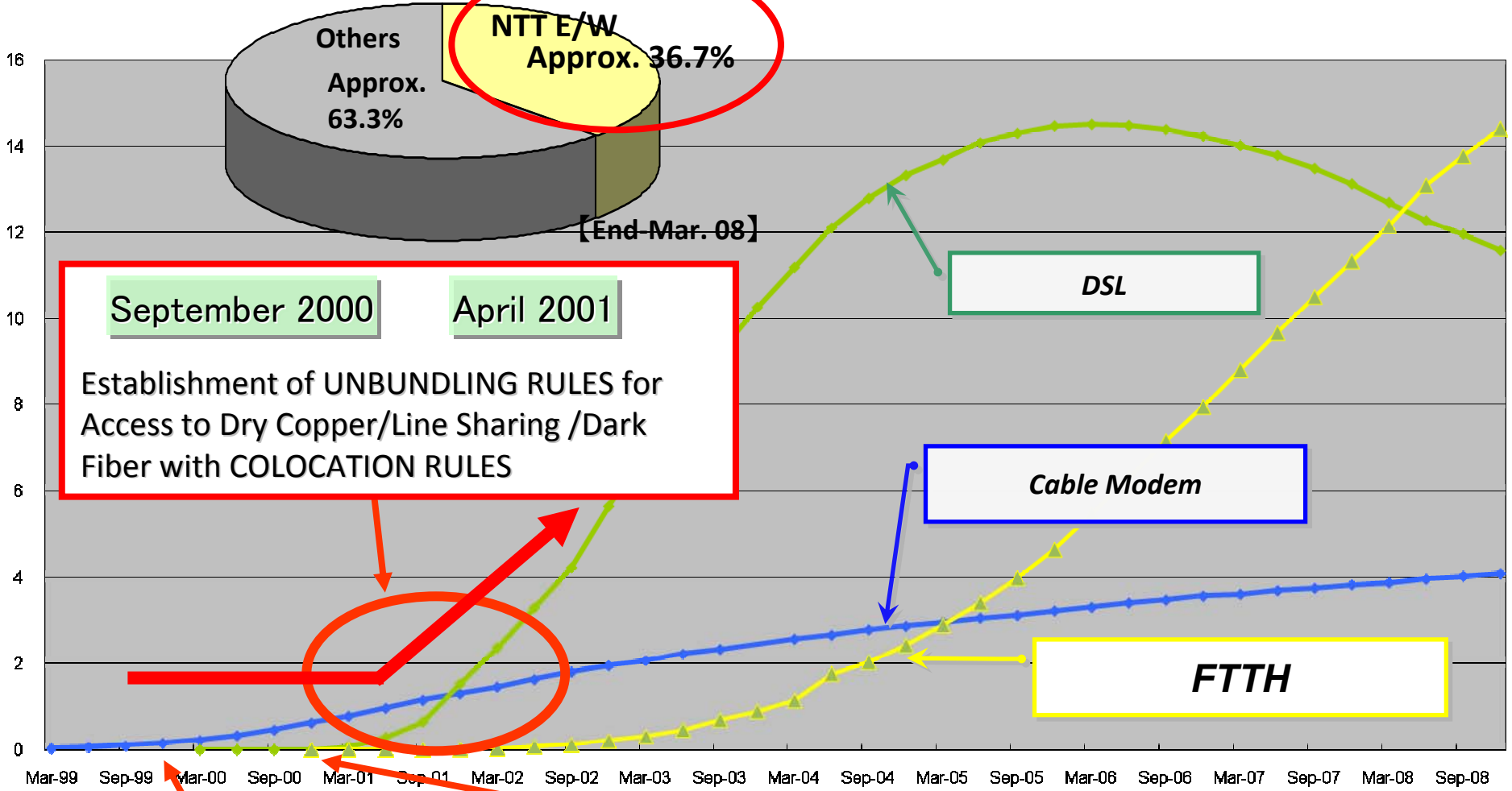
❑ To connect facilities with the unbundling of lines, COLOCATION rules were vital for competitive carriers to provide their services.

Colocation Rules (Sept. 2000~)

- 1) Disclose information on open space
- 2) Set application procedures for construction and maintenance by interconnection carriers
- 3) Set up standard period (for survey application, reply, application of installation and starting construction)

Competition brought many subscribers

(millions subscribers)

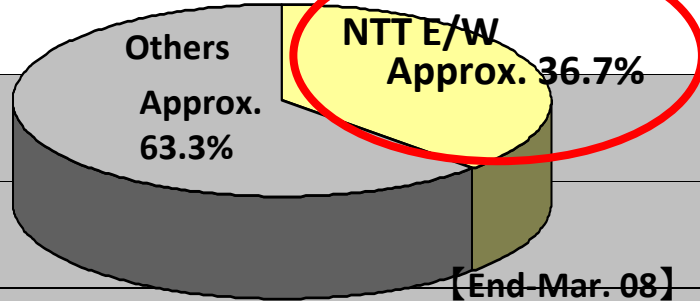


Dec.1999 First Unbundling of Dry Copper/Line Sharing

Dec.2000 First Unbundling of Dark Fiber

September 2000 April 2001

Establishment of UNBUNDLING RULES for Access to Dry Copper/Line Sharing /Dark Fiber with COLOCATION RULES



DSL

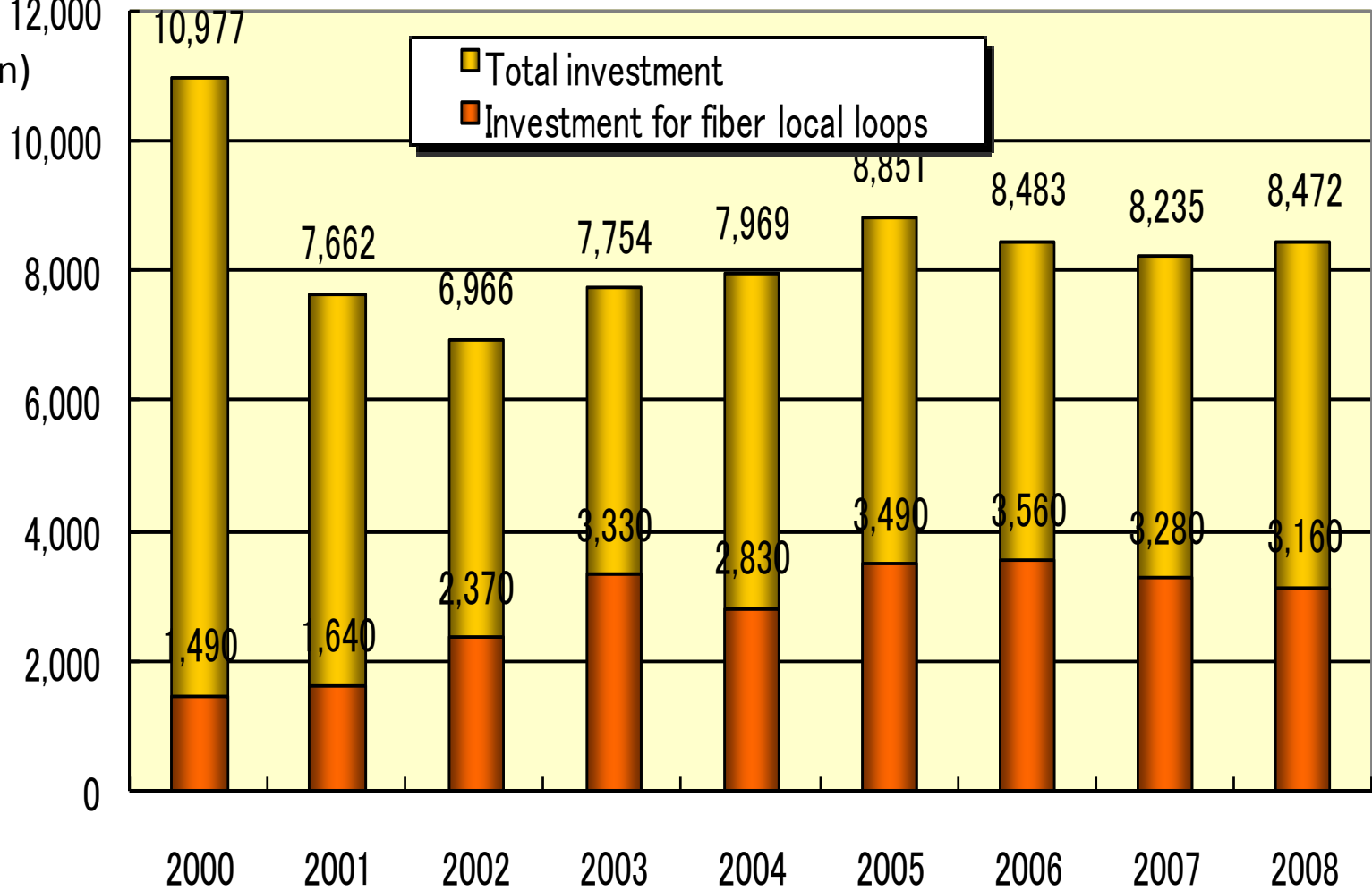
Cable Modem

FTTH

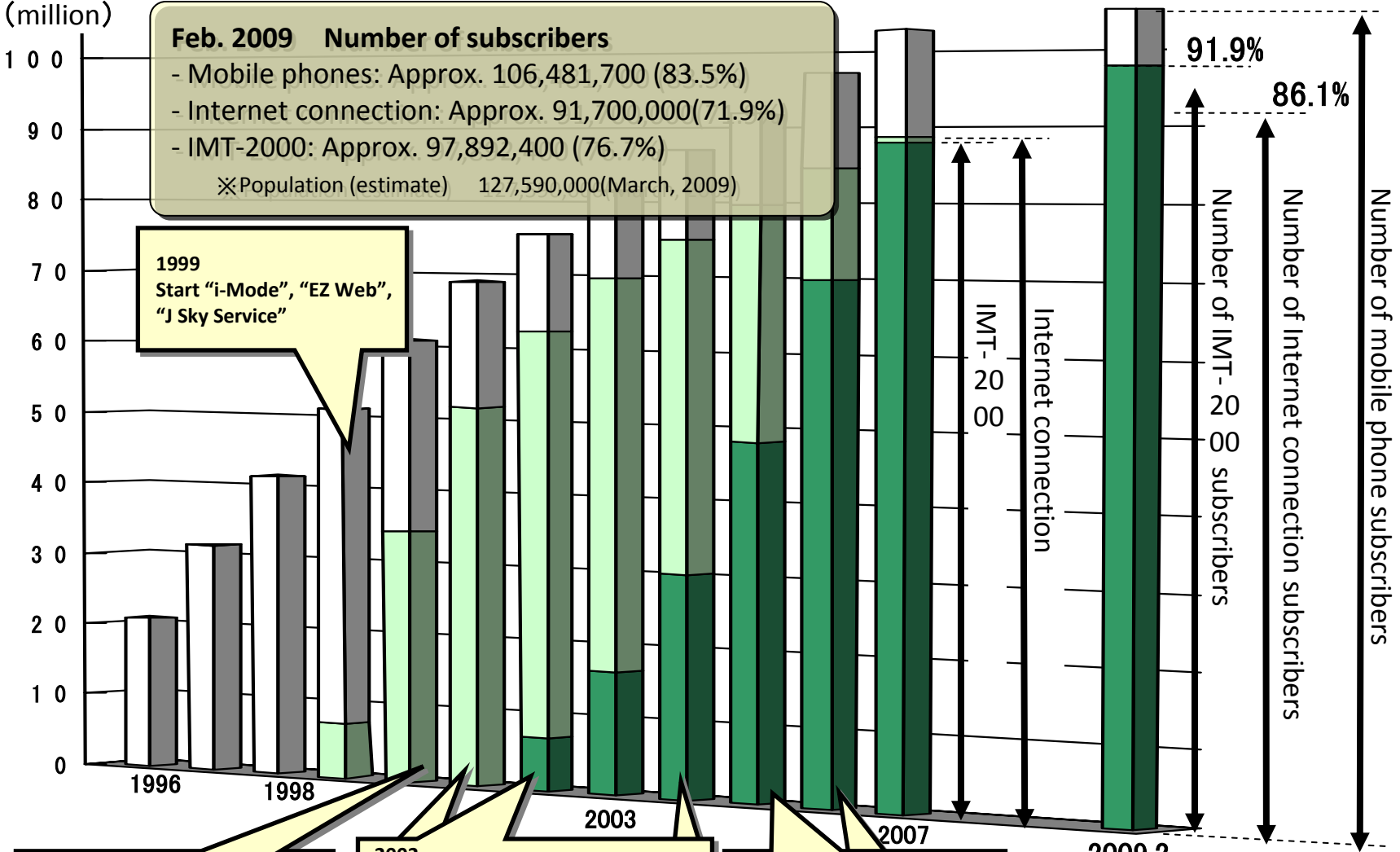
Fiber unbundling has not affected NTT's Investment in fiber so far

【Total investment and trend of investment for fiber local loop】

(unit:
hundred million yen)



Changes in the Mobile Phone Environment



1999
Start "i-Mode", "EZ Web",
"J Sky Service"

2000
Mobile phone with camera

2002
Download music services
E-mail with picture/movie services

2005
Flat rate data plan

2001
(Start of IMT-2000 service)
Mobile phone with GPS
Mobile video phone

2004
Osai-fu-Keitai (Mobile phone
with electronic money)

2006
Mobile phone with terrestrial TV
Dual mode (IMT-2000+GSM)
Mobile Number Portability

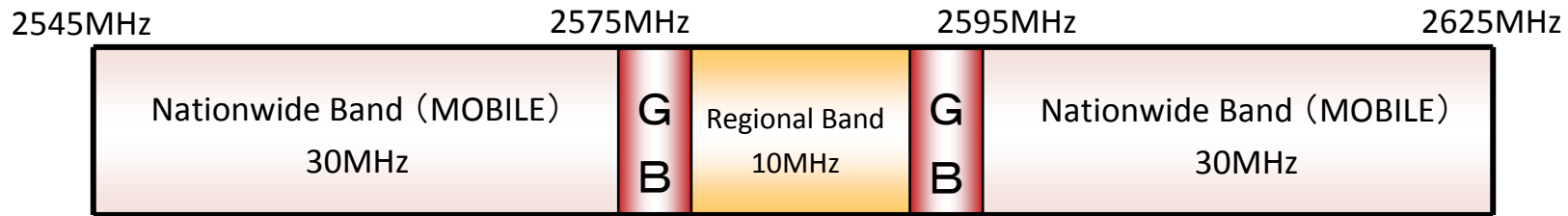
IMT-2000

Internet connection

91.9%
Number of IMT-2000 subscribers

86.1%
Number of Internet connection subscribers

Number of mobile phone subscribers



※GB: Guard Band (Total 10MHz)

Nationwide Band

- Allocate 30MHz each, maximum 2 operators.
- Restriction of incumbent cellular operators share (less than 1/3) .
- To launch the service within 3 years after the spectrum allocation.
- To cover 50% or more of each planned service area within 5 years after the spectrum allocation.
- To set up plans for MVNOs to use the BWA networks.

Beauty Contest among four Applicants

Willcom(XGP), UQ Com(Mobile WiMAX) (Dec 21, 2007)

Regional Band

- Allocate 10 MHz to local operators (including CATV), principally city by city.
- Requirement of plans to contribute to enhancing the local welfare, such as serving in digital devided areas to secure broadband access in rural areas.

42 operators got licenses (41 CATV operators,1 telecom operator) (June 16, 2008)

Grant-in-Aid for Promoting the Local Telecommunications Infrastructure (FY2006-)

This will be provided for a wide scope of activities to be performed by a local self-governing body that will establish an information and communications infrastructure (for example: FTTH, cable services, ADSL, Internet via satellite) in accordance with its characteristics to bridge the information gap.

Granting Rate

- a. Cities, towns, and villages falling in areas under disadvantageous conditions :1/3
- b. Merged cities, towns, and villages including a., or alliance cores :1/3
- c. Third-sector corporations :1/4

Budget Amount (billion)

| | |
|--------|---------|
| FY2009 | ¥89.162 |
| FY2008 | ¥16.72 |
| FY2007 | ¥ 5.7 |
| FY2006 | ¥ 9.36 |

Local Intranet Infrastructure Subsidiary (FY1998-)

This will be provided for a local public network whose speed is high or ultra high, connecting with schools, libraries and town hall.

Granting Rate

- a. Prefectures, cities, towns, villages,
or alliance cores (approximately 03. million population) :1/3
- b. Alliance cores except for a., or merged cities, towns, and villages,
or Okinawa :1/2
- c. Islands :2/3
- d. Third-sector corporations :1/4

Budget Amount (billion)

| | |
|--------|---------|
| FY2009 | ¥ 8.94 |
| FY2008 | ¥ 3.365 |