

PSTN Migration

General Outlook

November 2, 2010

Nippon Telegraph and Telephone East Corporation (“NTT East”)

Nippon Telegraph and Telephone West Corporation (“NTT West”)

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■ Introduction

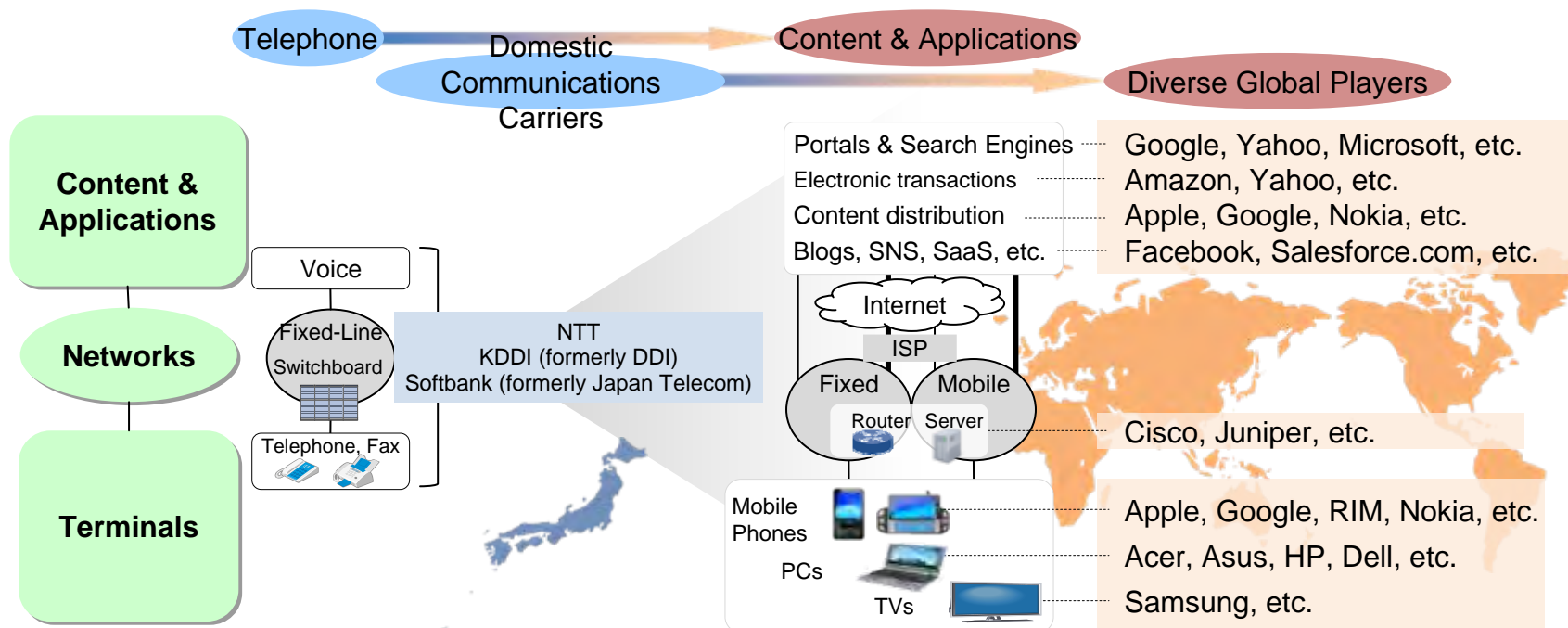
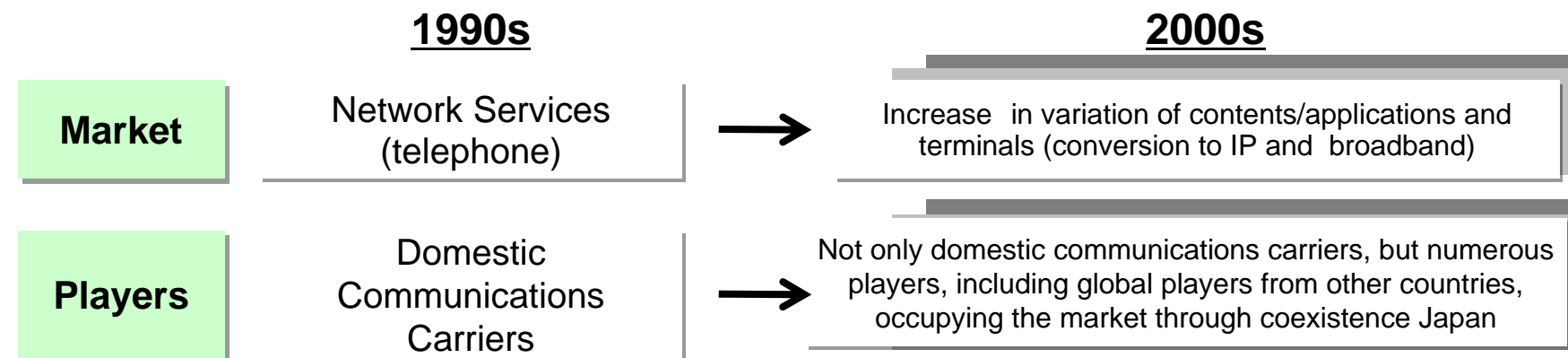
- As NTT East and NTT West have previously mentioned in such forums as the ICT Policy Task Force for a Global Era established by the Ministry of International Affairs and Communications (“MIC”), in connection with the migration¹ of core networks from PSTN² to IP networks, it has been our plan to announce this autumn a general outlook concerning the handling of functions / services not provided by current IP networks. Now, we would like to provide an explanation of our plans based on the following perspectives:
 - In light of the shift in demand to IP services and, among other things, the end of the useful lives of PSTN switchboards, we anticipate beginning the migration from PSTN to IP networks approximately 10 years from now, around 2020, and completing the migration around 2025.
 - When making the migration from PSTN to IP networks, the provision of some services will be terminated. We are announcing the relevant details now, about 10 years in advance of termination, to give our customers adequate advance notice and to provide sufficient time to address customer concerns.
 - In order to achieve interconnectivity among IP networks for IP telephones currently connected by PSTN switchboards, we suggest that the numerous affiliated businesses share their respective thoughts to reach a common understanding.
- Even after the migration from PSTN to IP networks, we will make it possible to continue the basic services that customers use on PSTN networks and we will continuously expand IP-based services and work to improve customer convenience, in order to promote the increased use of IP and broadband services.
- In order to encourage the migration from metal cables to optical fiber, we will stimulate demand for optical fiber by various means, including by promoting the creation of services and the use of ICT, and we will continue to consider measures to support our customers in all phases of the migration, such as responding to any decreases in metal cable users, by proposing replacement services for services and functions that will no longer be available.

1. NTT's “migration” encompasses the migration from PSTN to IP networks and the migration from metal cable to optical fiber mentioned above, as well as the migration from old IP networks to new IP networks (NGN) (scheduled for implementation by the end of March, 2013).

2. PSTN (Public Switched Telephone Network): the network used for general subscriber telephone lines.

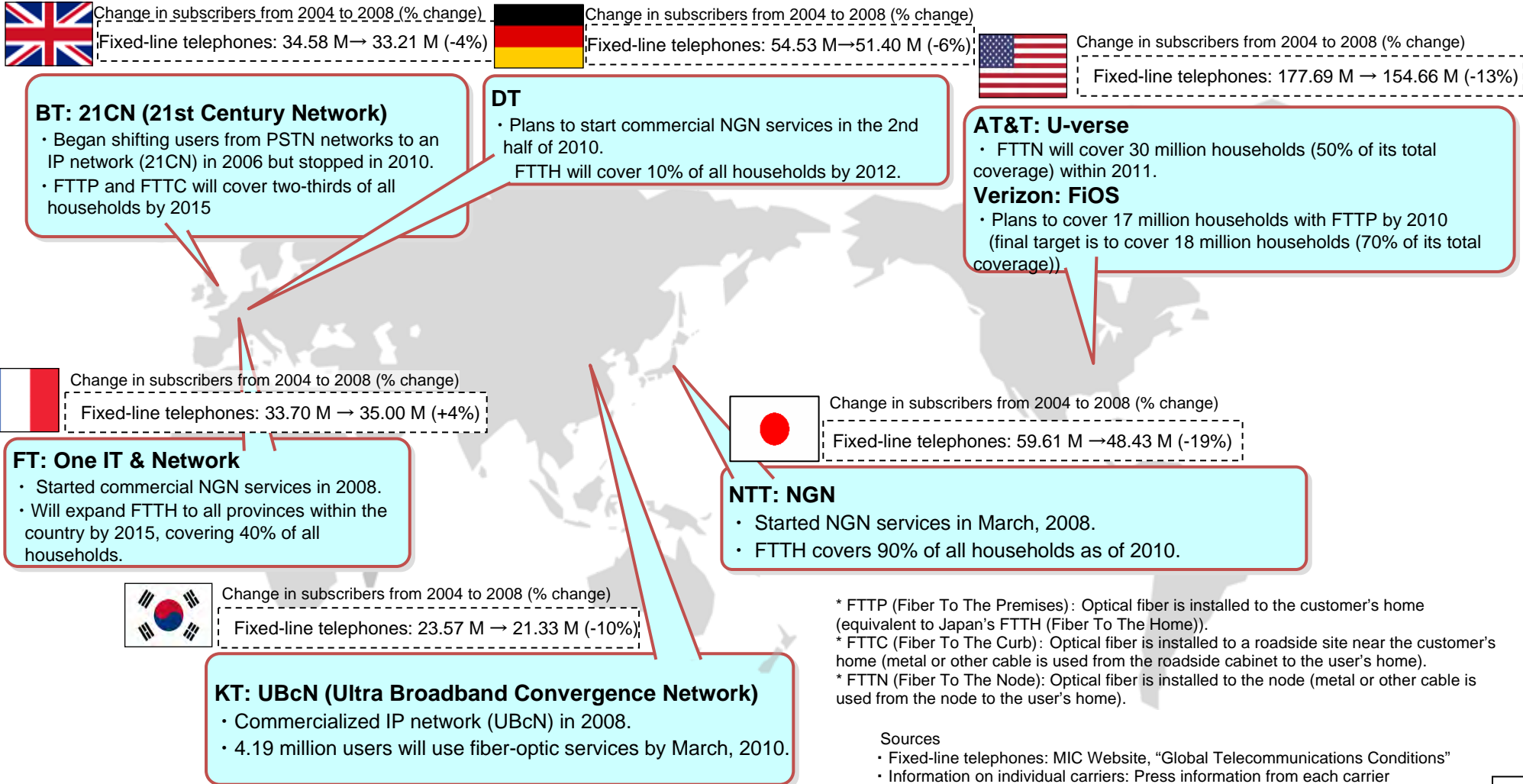
1. Paradigm Shift in Information and Telecommunications Markets

- In the information and telecommunications fields, a globalized IP and broadband paradigm shift is taking place.



2-1. Changes in User Needs and Reactions by the Carriers of Various Countries

- Overseas, demand for telephone services using PSTN has decreased and demand for IP services has increased. Overseas communications carriers are studying and promoting the transition to IP and broadband to match changes in user needs.



2-2. World Leader in Transitioning to Optical IP

- Japan is the world leader in transitioning to optical IP.

Comparison of Optical Broadband Services in Various Countries

Legend ■ :1st ■ :2nd

		Japan	South Korea	United States	France	Germany	United Kingdom
Household Coverage / Penetration Rate, etc.	Household Coverage Rate	90% Sep. 2008	67% Dec. 2008	13% Mar. 2009	11% Apr. 2009	0.4% Apr. 2009	0.0% Apr. 2009
	Household Penetration Rate	38% Jun. 2010	44% Mar. 2010	3% Jun. 2009	0.2% Sep. 2009	0.04% Sep. 2009	0.00% Sep. 2009
	Number of Subscriptions	18.57 M Jun. 2010	8.32 M Mar. 2010	3.54 M Jun. 2009	0.06 M Sep. 2009	0.02 M Sep. 2009	0.00 M Sep. 2009
Service	Speed	200 M High Speed Type	100 M	50 M	100 M	50 M	40 M
	Cost per 1 Mbps	¥31	¥36	¥214	¥47	¥ 137	¥75

*Household coverage / penetration rate, etc. are stated for the nation as a whole: Services refer, by country, to services provided by: in Japan - NTT East; in South Korea – KT; in United States – Verizon; in France – FT; in Germany – DT; and in United Kingdom - BT

Sources:

Household Coverage Rate: Japan: figures released by the MIC; other countries: OECD (2010), Indicators of broadband coverage

Household Penetration Rate and Number of Subscriptions: Calculated based on figures from regulatory agencies in each country

Speed and Cost per 1 Mbps: Japan: each company's website, a 2009 MIC price differential survey, etc. (NTT East's FLET'S Hikari High Speed Type 200 Mbps)

3. NTT East's and NTT West's Efforts to Promote Broadband Use

● Pursuant to “Road to Service Creation Business Group,” NTT Group’s Medium-Term Management Strategy, NTT East and NTT West have been taking measures to expand the use and coverage area of broadband services, and will continue to further promote the development of broadband services in the future.

- (1) We have expanded the optical broadband coverage area and enhanced services.
- Japan is the world leader in the full-scale deployment of fiber-optic services and currently provides fiber-optic services to approximately 14 million subscribers. See Reference 1.
 - The optical service coverage rate has increased to 90% of the entire country through facility competition. We are now expanding the service coverage area through IRU. See Reference 2.
 - We began providing NGN services in 2008 and plan to make the NGN available to nearly the entire existing optical coverage area by the end of March, 2011.
 - In addition to Internet services, we have strengthened IP telephone, video, and other services (Hikari Denwa, FLET'S TEREBI, etc.).
 - We are conducting research and development and promoting the practical application of optical cabling that can be easily installed in multi-unit dwellings and indoor spaces.

Going forward, we will further stimulate demand for fiber-optic services by providing new services and rates that are user-friendly even for first time users and light users.

- (2) We have contributed to the strengthening of ICT in electronic government, education, healthcare, etc., by working with local governments nationwide to develop and implement their ICT programs in their fields. In the future we will actively promote the use of ICT for the provision of cloud services for educational and other purposes. At the same time, we will work to increase speed and capacity in accordance with the needs of hospitals, schools, etc.
- For a description of efforts in education, including participation in the MIC Future School Promotion Project, see Reference 3.
 - For a description of efforts in the healthcare field, including remote health consultations / health guidance in such areas as Tono City, Iwate Prefecture, see Reference 4.

- (3) We have started providing “Hikari Portable,” which creates seamless broadband environments at home as well as at remote locations and supports access by an increasingly diverse range of wireless terminals such as game consoles, electronic books, and netbooks. In order to expand the base of broadband users, in addition to expanding net compatible terminals (Hikari LINK series) for non-PCs, we will also provide “Hikari i-Frame” (tentative name), a service that can be operated easily and which provides integrated access to various information. See Reference 5.

- (4) We are working to raise user ICT literacy by providing services that can be used with peace of mind, such as remote support, and by holding seminars on net security. Going forward, we will work to expand the user base and strengthen our after-sales support structure.

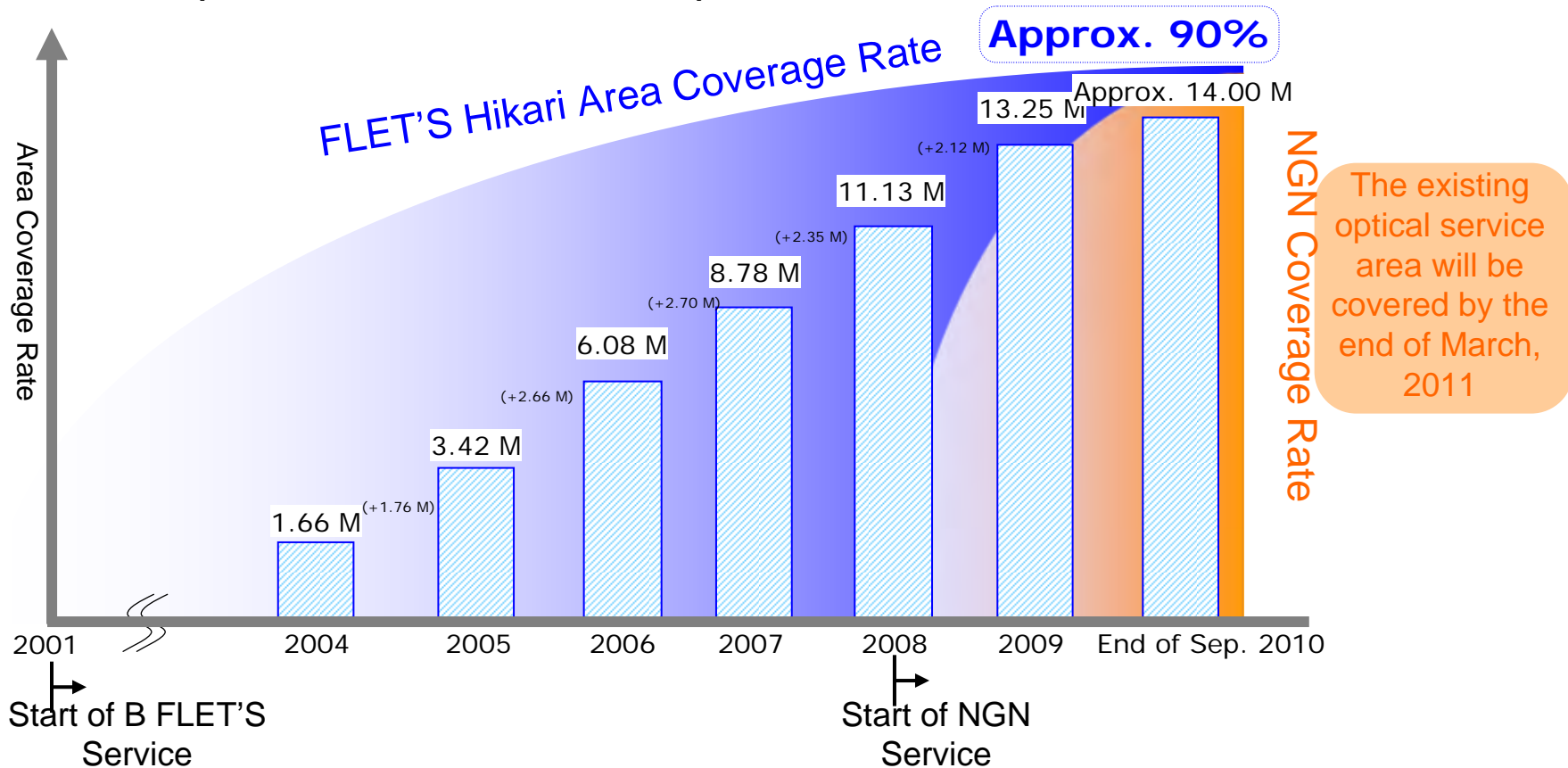
Past performance

Future

Reference 1. Shift in Number of FLET'S Hikari Subscribers and Area Coverage Rate

- Measures have been taken to expand the optical broadband coverage area and to promote the use of optical broadband services. Optical broadband services are currently offered to approximately 14 million households. The area coverage rate has been expanded to 90%.
- Provision of NGN services began in 2008, and will cover nearly all existing optical service areas by the end of March, 2011.

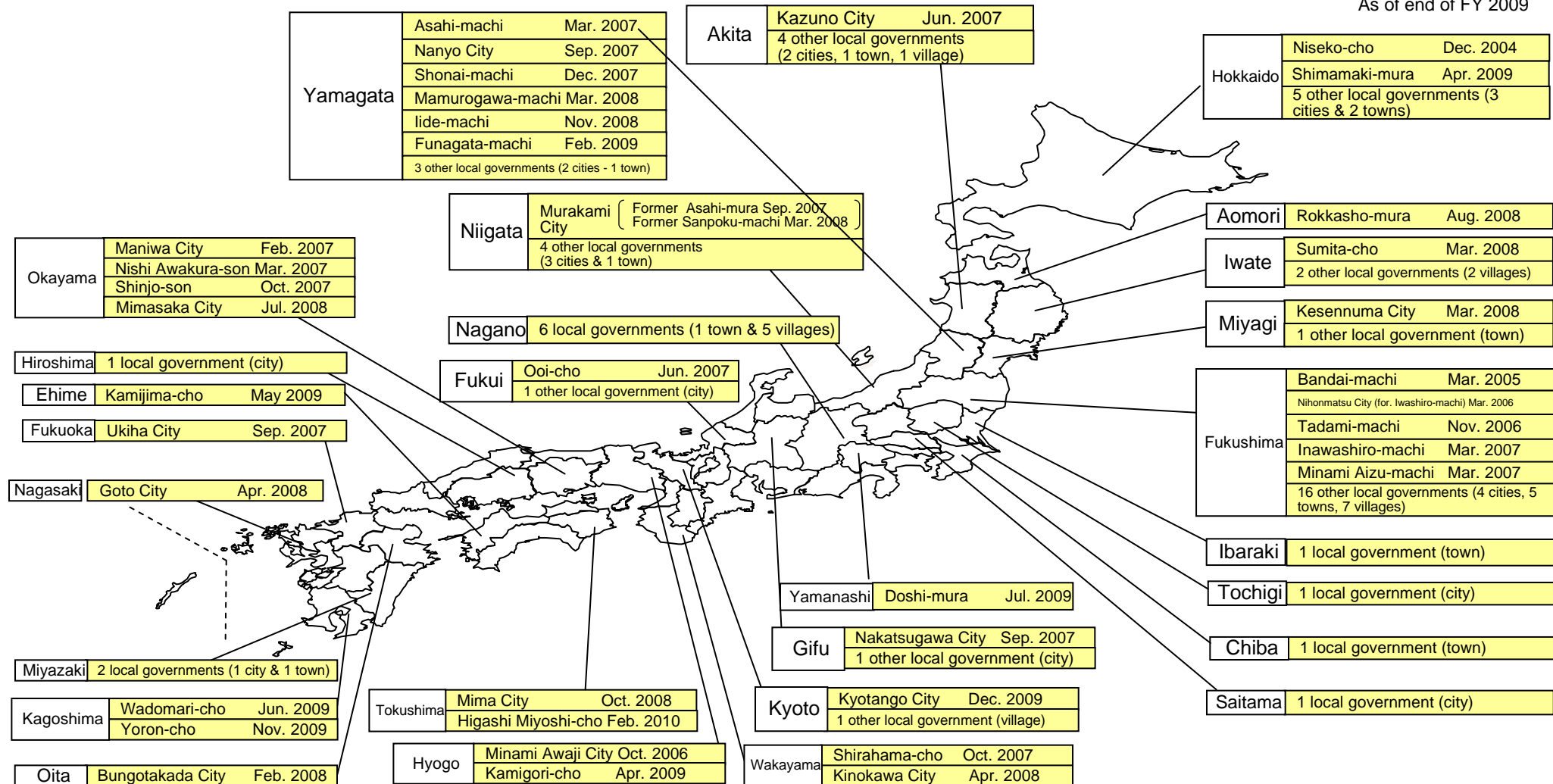
Changes in Number of FLET'S Hikari Subscribers and Area Coverage Rate (NTT East & NTT West Total)



Reference 2. Examples of IRU Measures

- NTT East and NTT West have cooperated on the construction of IRU projects and provides broadband services for IRU networks for approximately 90 local governments through the end of March, 2010.
- NTT East and NTT West are also currently working on approximately 240 local government proposals for IRU projects funded under the fiscal 2009 (ending March, 2010) supplementary budget.

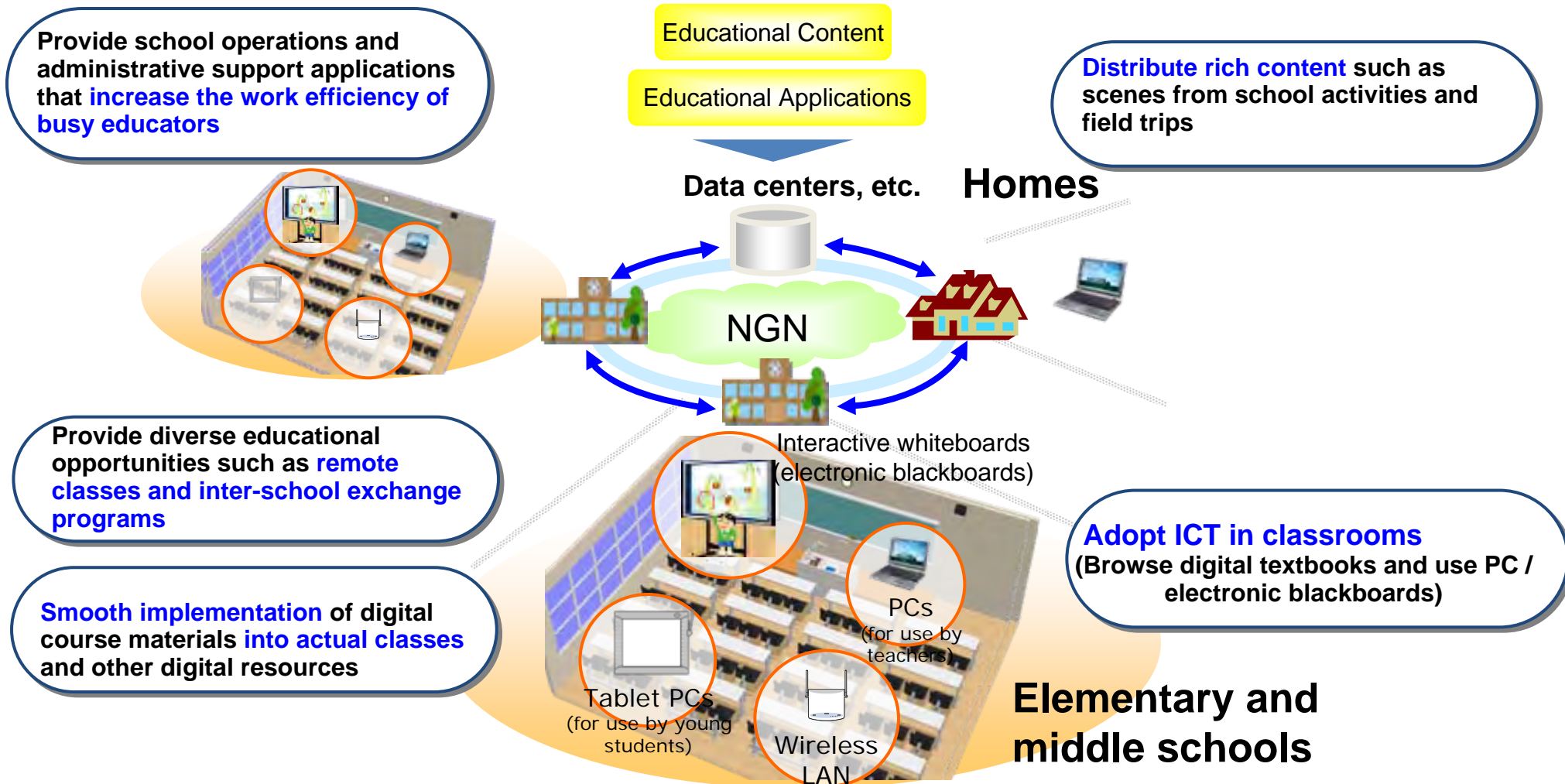
As of end of FY 2009



* IRU: Indefeasible Right of User

Reference 3. Measures for Using ICT in Education

- We are taking active measures to support the use of ICT in education by, for example, providing new educational content / applications in a broadband environment for information devices such as interactive whiteboards and tablet PCs.



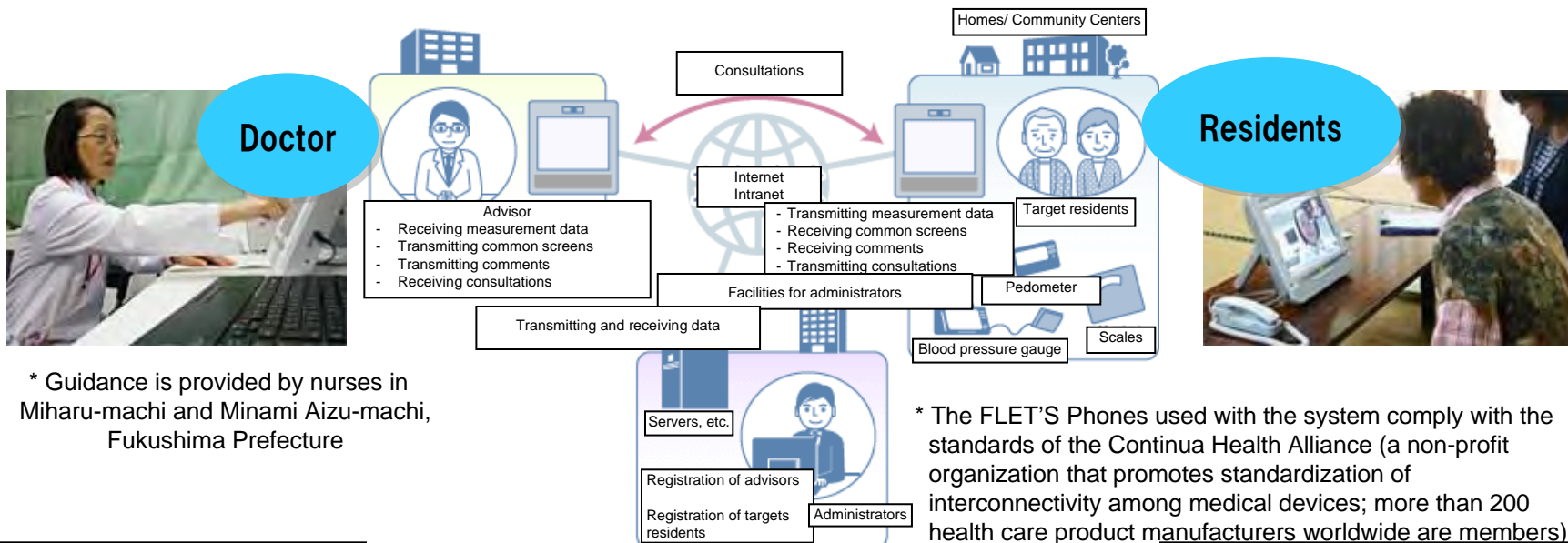
Reference 4. Measures for Using ICT in Medicine

- We are taking active measures to support the use of ICT in medical fields such as by providing, remote health consultations and health guidance systems using a FLET'S Phone.

Content

- Residents measure blood pressure, weight, number of steps walked, etc. and register the data on a management server via a FLET'S Phone several times a month.
 - Residents use measuring instruments that are installed at a community center, together with a FLET'S Phone (in Kurihara City only, the system can be accessed from some homes).
 - The measured data is transmitted to a receiver connected to a FLET'S Phone*, and ID verification is performed simply by holding the pedometer over the receiver without the need for manual input of an ID and password, making operation very easy (data input was required with the system initially installed in Tono City, but the system was upgraded this autumn).
- Based on the registered data, physicians and nurses from remote locations use videophones to provide health advice and guidance.

Service Depiction



Measured Data

Blood pressure, weight, pedometer data, etc.

Local Government

Tono City, Iwate Prefecture

Kurihara City, Miyagi Prefecture

Miharu-machi & Minami Aizu-machi, Fukushima Prefecture

Start of Operations

March 2009

April 2010

August 2010 (demonstration experiment)

Scale

- Four physician sites and one clinical nurse site
- 17 community centers
- Approximately 100 residents; currently being increased gradually to 400 residents starting this autumn

- Two physician sites
- Five community centers
- Approximately 90 residents; of which, five households use the system from home

- Miharu-machi
- One health center
- Three community centers
- Approximately 70 residents

- Minami Aizu-machi
- One health center
- Two community centers
- Approximately 50 residents

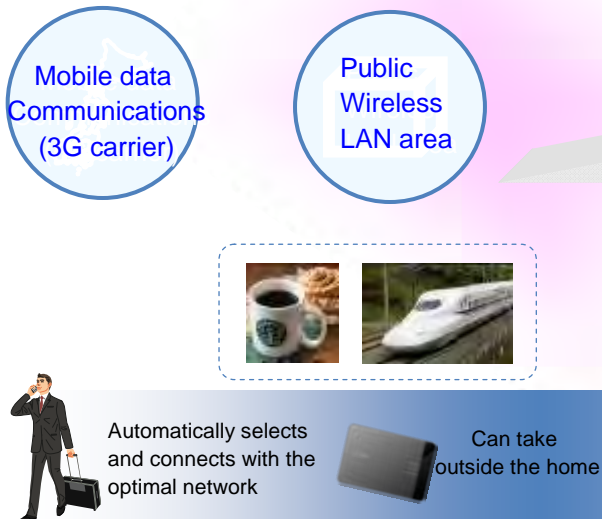
Reference 5. Provision of User-Friendly Terminals

- We are offering “Hikari Portable”, a mobile wireless service capable of achieving a seamless broadband environment at home as well as at remote locations, and which supports access by an increasingly diverse range of wireless devices, such as game consoles, electronic books, netbooks, and others.
- With the goal of expanding the base of broadband users, NTT plans to launch the easy-to-operate PC-less platform terminals “Hikari i-Frame” (tentative name) and “N-TRANSFER”, which will enable users to utilize various content and services.

Keeping pace with diversification of wireless devices

“Hikari Portable”

- Optical connection with game consoles, electronic books, netbooks and a diverse range of other wireless devices
- At home, connection is made through wireless LAN; outside the home, connection is made with a pocket-sized cognitive router that automatically connects with FLET'S SPOT and 3G network.
- A seamless broadband environment available at home and outside the home



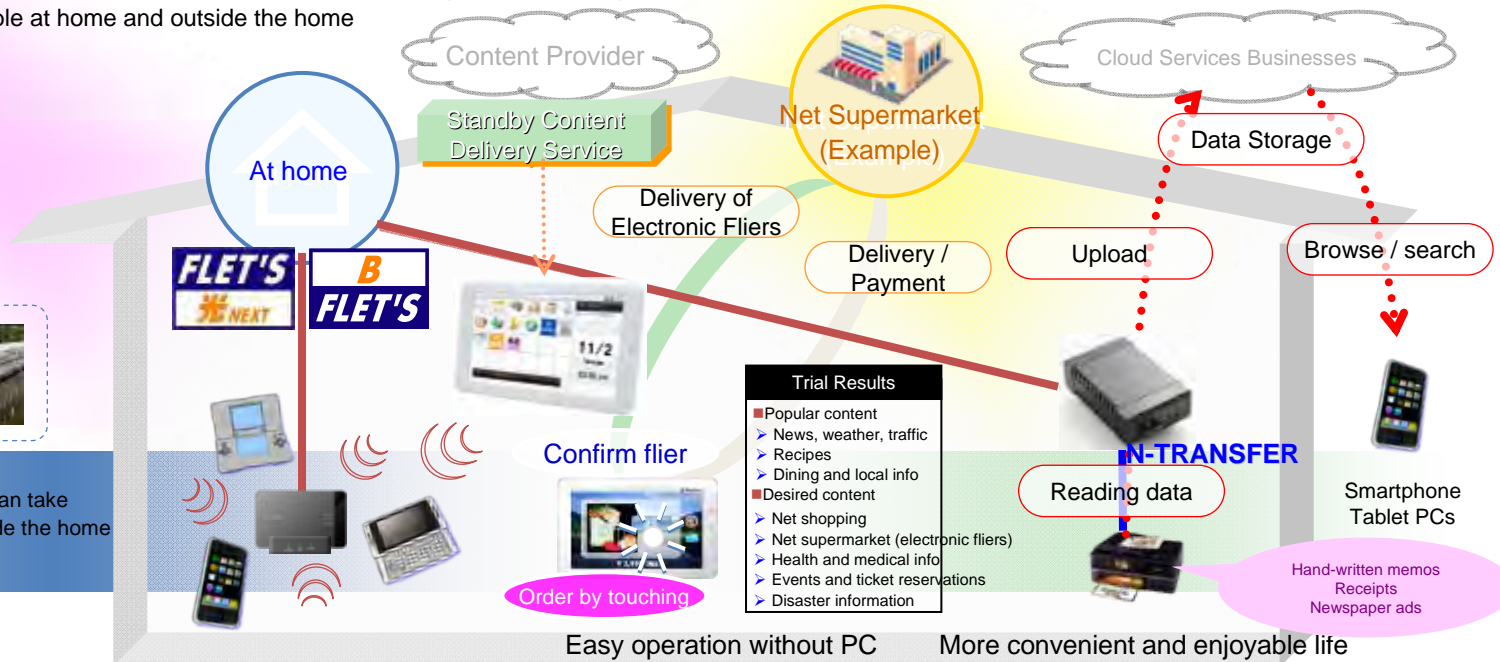
Expanding the broadband user base

“Hikari i-Frame” (Tentative name)

- Platform terminal providing a variety of information
- Big 7 inch screen, and easy to operate touch panel

「N-TRANSFER」

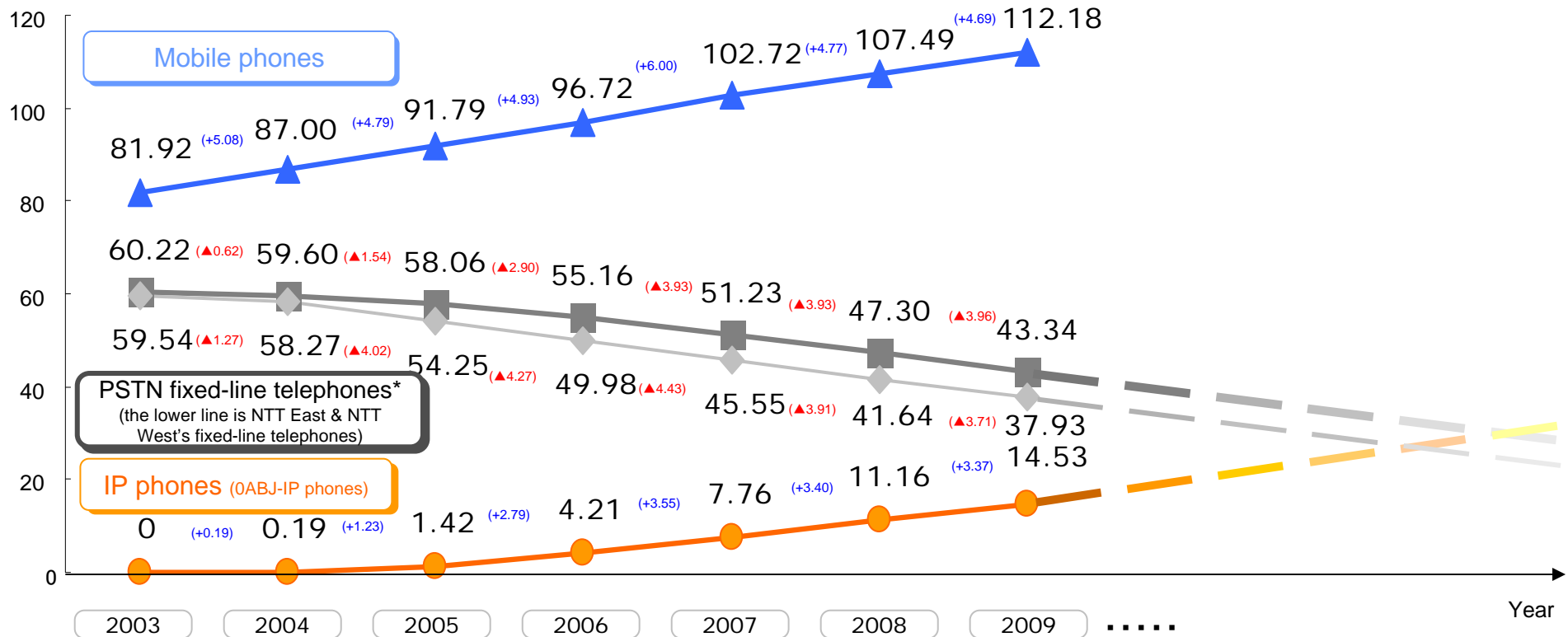
- Terminal that easily uploads data directly from the scanner to Cloud Services
- Ability to browse and search on the terminal from outdoors



4. Decline in Demand for PSTN Fixed-Line Telephone Service

- The number of PSTN fixed-line telephone users is declining annually by approx. 10% as a result of the shift to mobile phones and IP phones.
- It is difficult to estimate how many PSTN fixed-line telephone users will remain in the future, but a certain level of such users is expected. The question of how to incorporate such users into IP networks is subject to further review.

Million subscriptions



* PSTN fixed-line telephones: NTT East and NTT West's fixed-line telephones (including ISDN), direct subscriber telephones (total of conventional direct subscriber telephones, new-type direct subscriber telephones, and direct subscriber ISDN), and cable TV telephones.

Source: Ministry of Internal Affairs and Communication

(Announcement of Quarterly Data on the Number of Telecommunications Service Subscribers and Shares (1st Quarter of FY2010 (June 30, 2010)))

5. PSTN Switchboards Come to the End of Their Useful Lives

~Adequate Notification to Users and Coordination Among Businesses~

- PSTN switchboards will reach the end of their useful lives around 2025. It is expected to take 5~6 years to migrate from PSTN to IP networks, and the migration will begin sequentially around 2020 (in approximately 10 years).
- A smooth implementation of PSTN migration requires adequate notification to users and coordination among businesses. As it is now 10 years prior to the launch of the migration, to ensure smooth implementation we are announcing those functions and services which are not provided under current IP networks, and commencing a review to find solutions to those issues.

Services	Adequate notification to users	<ul style="list-style-type: none">▶ Since migration will result in termination of some services, and business users may need to evaluate their system update cycle and other issues, we are providing an adequate notice period.
Interconnection	Coordination among businesses	<ul style="list-style-type: none">▶ In addition to NTT East and NTT West, it is envisioned that other domestic and overseas carriers will be shifting from the existing PSTN networks to IP networks as well. It is necessary to coordinate among related businesses to discuss interconnection methods to be realized among IP networks.

6-1. Handling Services in Accordance with Changes in User Needs

- Basic services provided using PSTN are to be continued with IP networks following PSTN migration.
- However, after an adequate notice period to customers, services for which customer usage is expected to decline will be terminated upon PSTN migration or when equipment providing such services reach the end of their useful lives.

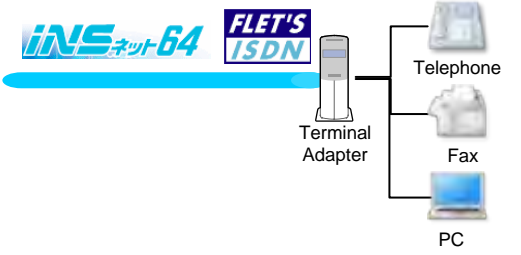
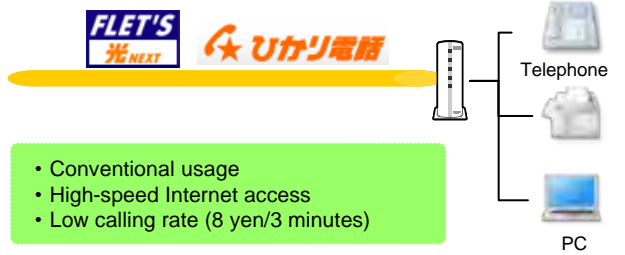
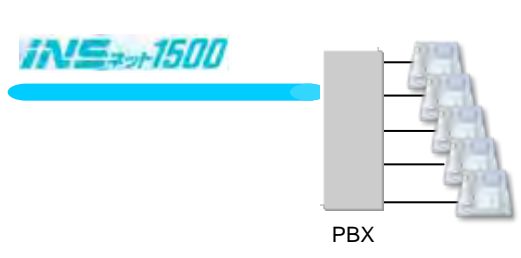
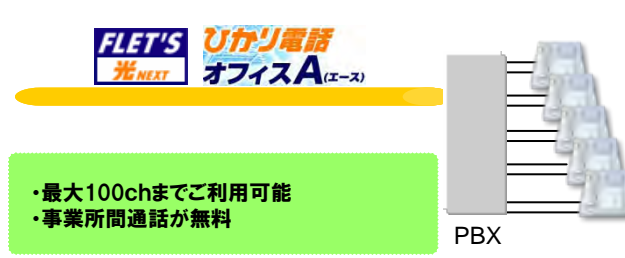
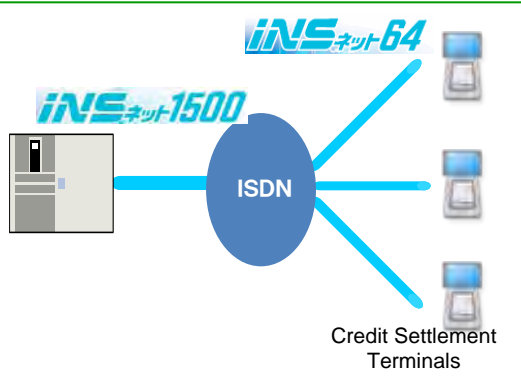
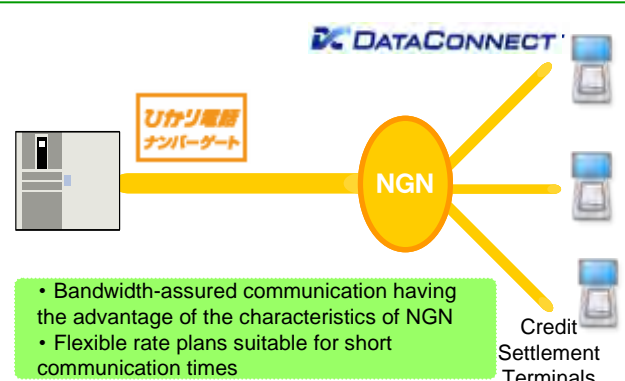
Review of PSTN Services

<p>Continued Provision of Basic Services</p> <p>(Changes in specifications or replacement of terminals may be necessary in some cases)</p>	<p>Basic voice services, public telephone, emergency numbers (police (110), marine emergencies (118), fire (119)), time (117), weather report (177), Directory Assistance (104), telegrams (115), caller ID display (Number Display), anonymous call rejection, nuisance call blocking, call waiting, call forwarding, Call Forwarding Select, toll free, # dialing, switchboard, direct inward dialing, and other services.</p>
<p>Termination of services for which customer usage is expected to decline*</p>	<p>INS networks, centrex service, incoming call phones, store switchboard phones, cable broadcast phone-connection phones, pay phones, speed dial, Caller ID Display for Call Waiting (Catch Phone Display), caller ID announcement, “denwaban” answering service, voice guidance, incoming and outgoing call only phones, non-ringing communication and others.</p> <p>(Services expected to phase out prior to PSTN migration: Call Waiting II, Magic Box (voice mail), Voice Box, Caller Name Display (Name Display), local information broadcasting, signal monitoring, Dial Q², connection call services (such as collect calls), and other services.)</p>

* Based on the customer usage trend going forward, alternative services will be proposed and developed as necessary.

6-2. Alternative Scenarios After Termination of Services (Example: INS Networks)

- Broadband services can serve as an alternative for multi-channel communications and data communications, the main applications for INS networks.
- Going forward, to support a smooth migration to broadband services we will propose alternative services that take into account the devices used by customers and information systems update opportunities.

Features	Current Usage	Alternative Services Usage
	<p>Used in telephone, facsimile, and Internet</p> 	<p>FLET'S Hikari Next & Hikari Denwa (2 channels, 2 numbers)</p>  <ul style="list-style-type: none"> • Conventional usage • High-speed Internet access • Low calling rate (8 yen/3 minutes)
<ul style="list-style-type: none"> • Data communications can be used in addition to voice communications • Multiple phone lines can be used simultaneously 	<p>Used in office voice lines (23 channels)</p> 	<p>FLET'S Hikari Next & Hikari Denwa Office A</p>  <ul style="list-style-type: none"> • 最大100chまでご利用可能 • 事業所間通話が無料
<p>Used in POS, ATM, and credit settlement systems</p> <p>INS-Net 64: 2 lines INS-Net 1500: 23 lines</p>		<p>FLET'S Hikari Next & Hikari Denwa Number Gate & Data Connect</p>  <ul style="list-style-type: none"> • Bandwidth-assured communication having the advantage of the characteristics of NGN • Flexible rate plans suitable for short communication times

Note: It may be necessary to update hardware and information systems.

7-1. Smooth and Efficient Interconnection Among IP Networks (Creating a Forum for Coordination Among Related Businesses)

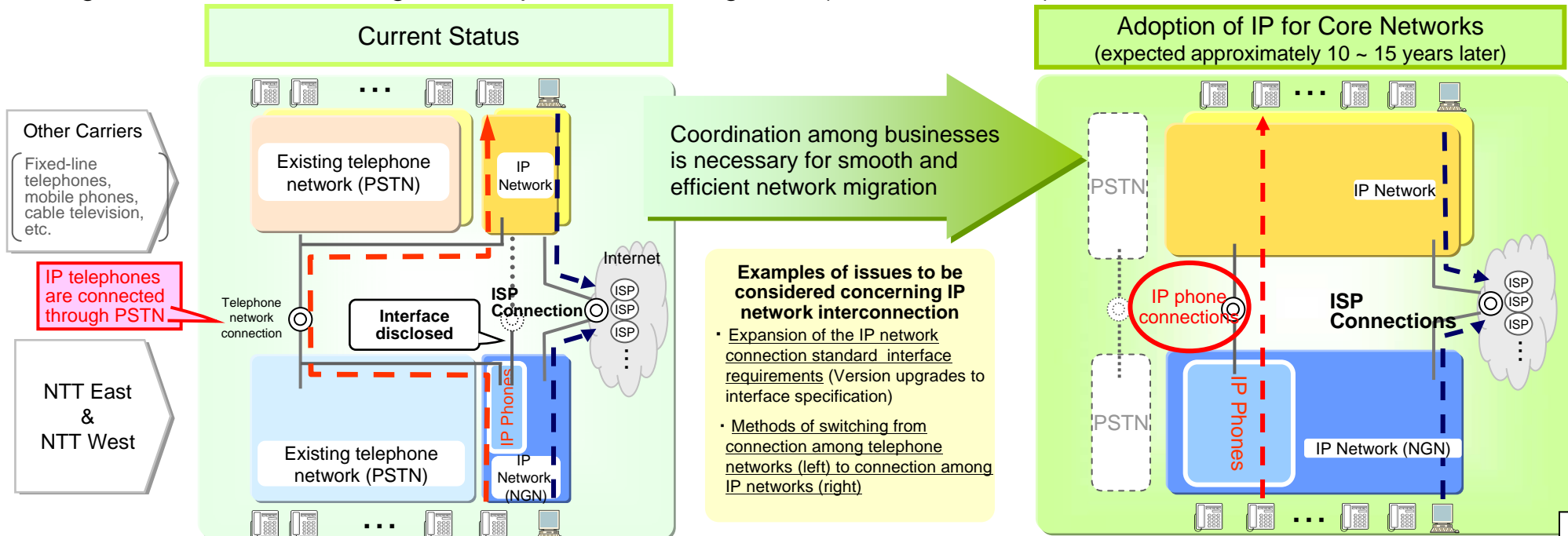
- Presently, for interconnection among IP networks:
 - Direct connections between multiple ISPs is achieved for Internet connections, but
 - Telephones that use IP networks (IP telephones) are still connected through the PSTN, which has many customers, and NTT East and NTT West IP networks are not connected directly with other carrier's IP networks nor are other carrier's IP networks interconnected among themselves.

However, all carriers are proceeding with adopting IP for their core networks, and it is expected that, in the future, interconnection among IP networks will occur in connection with the increase in IP telephone users.

- Migration to interconnection among IP networks for provision of IP telephony services must be performed smoothly and efficiently while carefully considering the IP network migration plans of other carriers, to ensure that there is no impairment in customer service. NTT East and NTT West have proposed the creation of a forum for coordination among multiple carriers, where various issues concerning connection of IP networks will be discussed and from which proposals will be made to standardization organizations when necessary.

Note: In preparation for commencing NGN services, NTT East and NTT West have been disclosing their interfaces, as well as conducting field trials and confirming interconnection technologies, but IP network connection has not been realized for commercial services other than between NTT East and NTT West.

Changes in Connection Configuration upon Network Migration (from PSTN to IP)

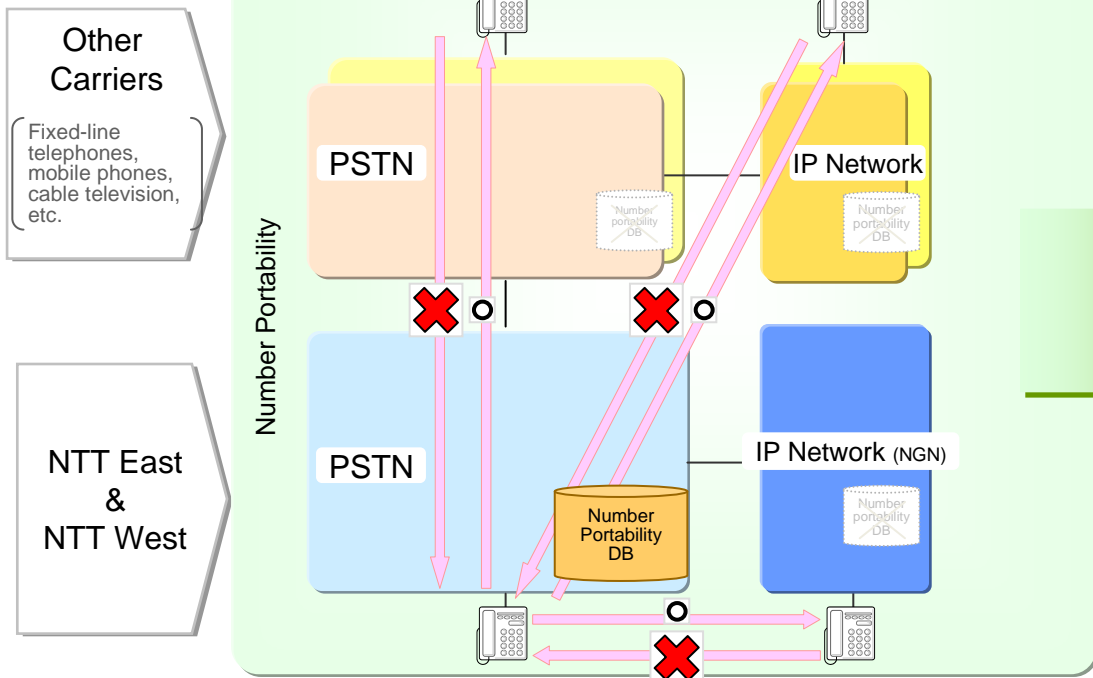


7-2. Reciprocal Number Portability Functionality

- Number portability¹ for fixed-line telephones is currently possible only in one direction from NTT East or NTT West to other carriers.
- To respond to customer needs, going forward we would like to conduct discussions with other carriers to achieve reciprocal number portability functionality, similar to that for mobile phones, when carriers make the transition to IP networks.

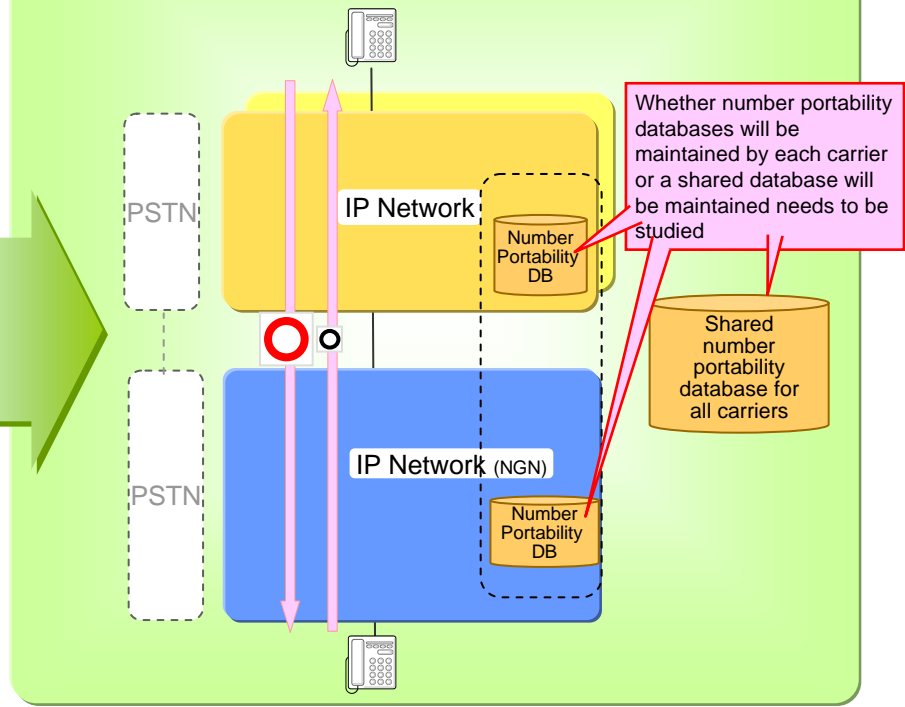
Current Status

- NTT PSTN → Other carrier networks (users can keep the same number)
- × Other carrier networks → NTT PSTN (a new number is required²)



Adoption of IP for Core Networks (expected 10 ~ 15 years from now)

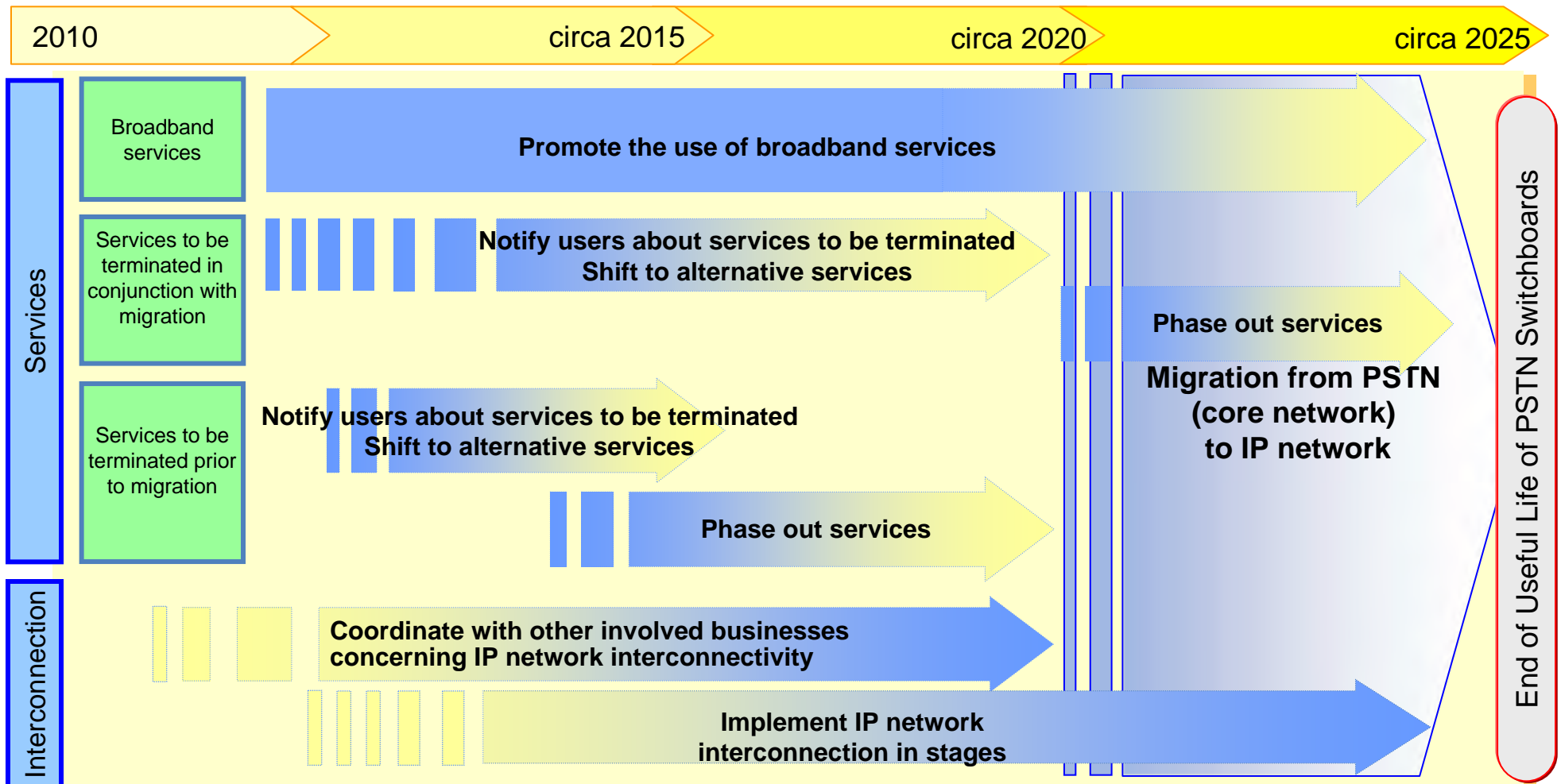
- NTT IP Network ↔ Other Carriers' IP Networks (users keep the same numbers)



1. A system that allows users to keep the same phone number when changing telephone carriers.
 2. Under the number portability system, when a number issued by NTT East or NTT West is used, the customer may change carriers and keep the same number.

8. Schedule for PSTN (Core Network) Migration

- Services to be terminated in conjunction with the migration will be phased out sequentially after providing adequate notice to users and efforts to promote a shift to alternative services during the period from now until around 2020.
- Services to be terminated prior to the migration will be phased out by around 2020 after providing adequate notice to users and encouraging a shift to alternative services in conjunction with the timing of service termination.
- IP network interconnection will be implemented in stages upon coordination with other businesses.



The forward-looking statements and projected figures concerning the future performance of NTT East, NTT West, their respective subsidiaries and affiliates, and their parent company (NTT) contained or referred to herein are based on a series of assumptions, projections, estimates, judgments and beliefs of the management of NTT East and NTT West in light of information currently available to them regarding NTT East and NTT West, the economy and telecommunications industry in Japan and overseas, and other factors. These projections and estimates may be affected by the future business operations of NTT East, NTT West, their respective subsidiaries and affiliates and NTT, the state of the economy in Japan and abroad, possible fluctuations in the securities markets, the pricing of services, the effects of competition, the performance of new products, services and new businesses, changes to laws and regulations affecting the telecommunications industry in Japan and elsewhere, other changes in circumstances that could cause actual results to differ materially from the forecasts contained or referred to herein, as well as other risks included in NTT's most recent Annual Report on Form 20-F and other filings and submissions with the United States Securities and Exchange Commission.