

IPv6 Status in Japan

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IPv6 Promotion Council in Japan

30th October 2013

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- IPv6 Services in Japan
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About IPv6 Promotion Council in Japan

■ IPv6 Promotion Council

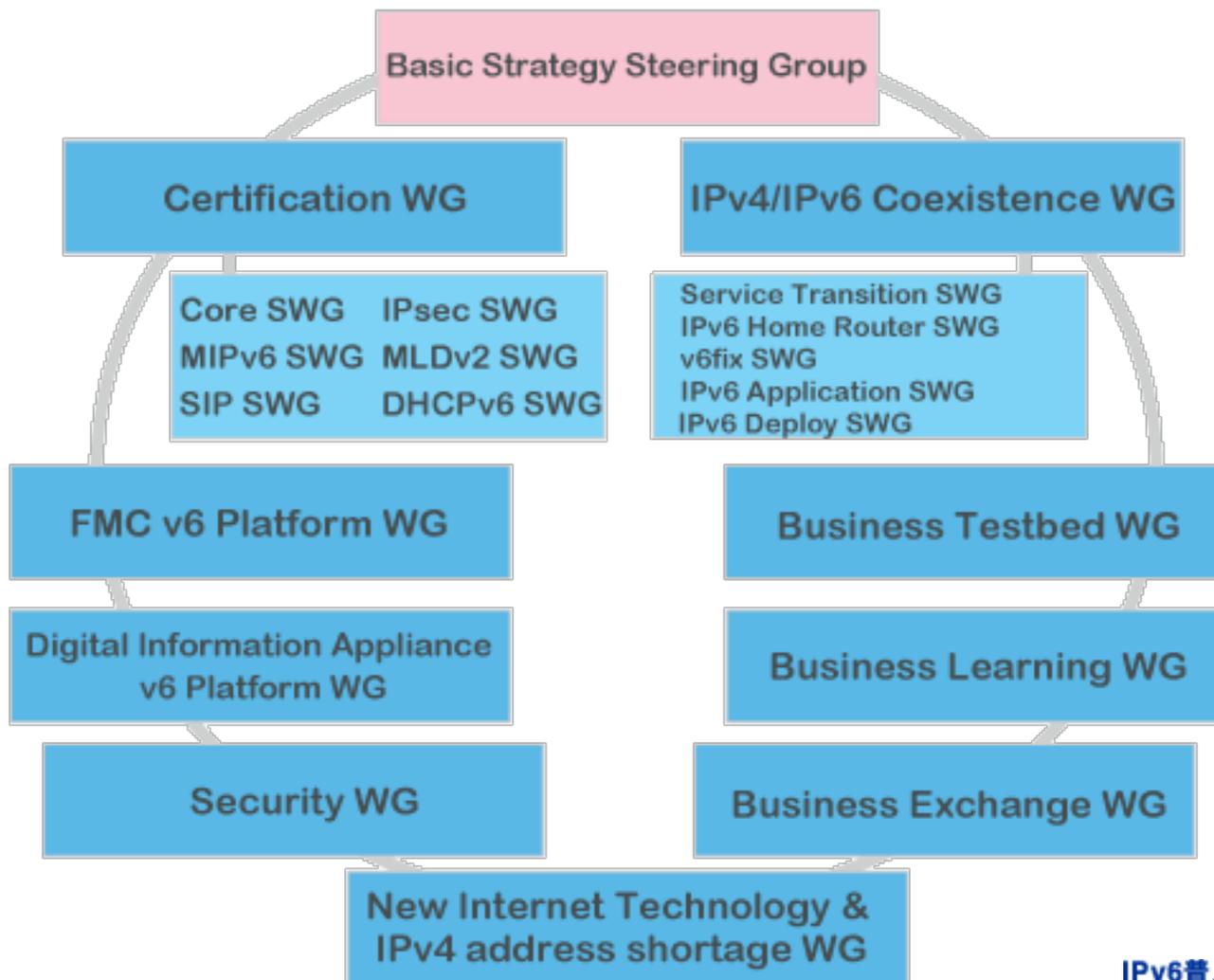
- Established on 2001.

- Aims

1. Pursue an international leadership role for Japan in the Internet field
2. Develop rich human resources for continuous development of a new infrastructure for a high information society
3. Promote new business and vitalize existing business in hardware, software and service of networks and devices

- <http://www.v6pc.jp/en/index.phtml>

Working Groups in IPv6 PC



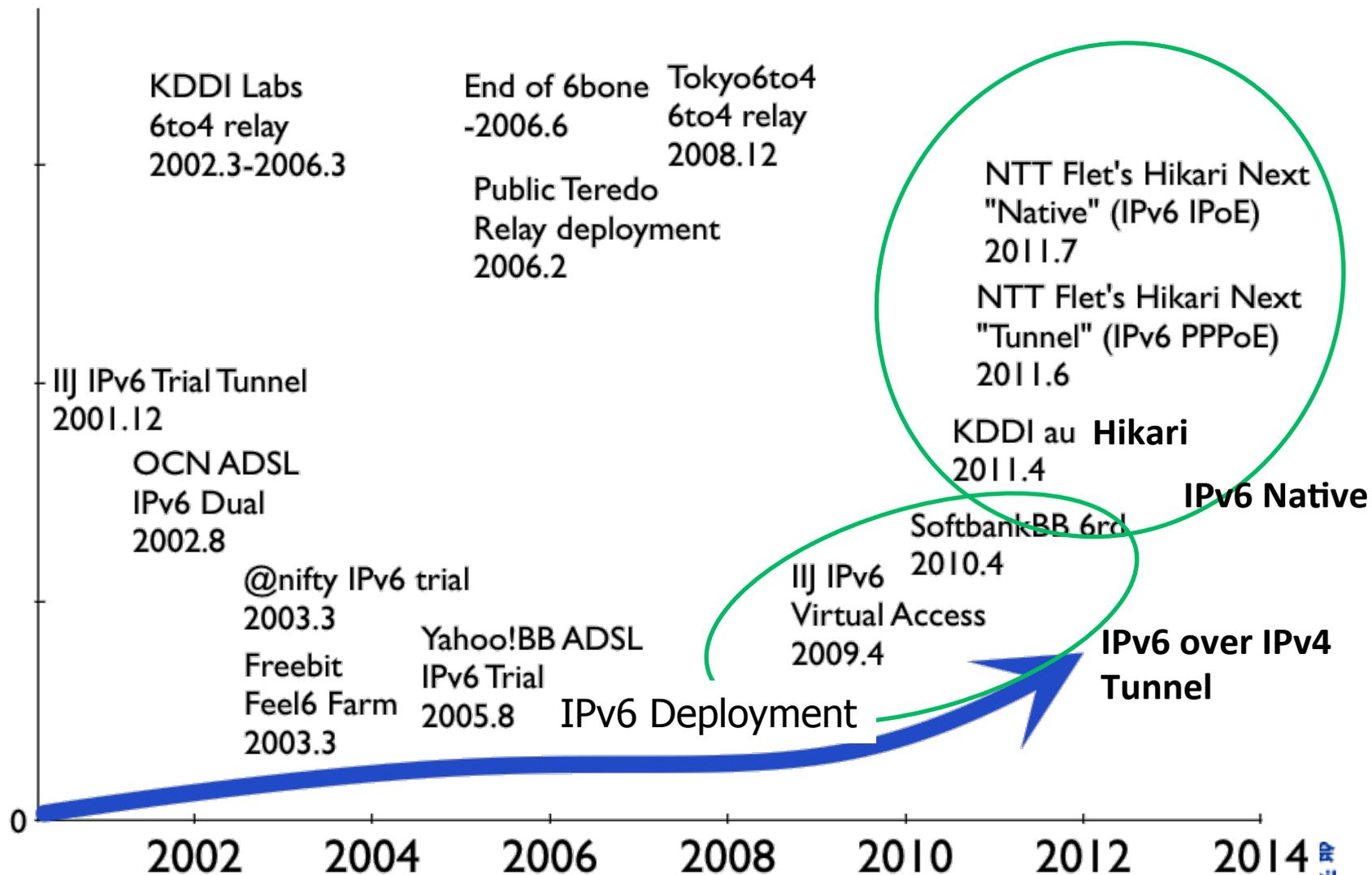
IPv6 Services in Japan

IPv6 services in Japan



- Many ISPs have started their IPv6 services
 - Not only for enterprises but for consumers
 - As of March 2013, 53% of FTTH users in Japan can buy IPv6 service
 - Many ISPs offer their IPv6 service with no additional fee [KEY POINT]
 - About mobile carriers, NTT Docomo and KDDI started IPv6 service in their LTE/3G network
 - Their LTE users can access to IPv6 Internet

IPv6 service for residential users in Japan



IPv6 services in Japan



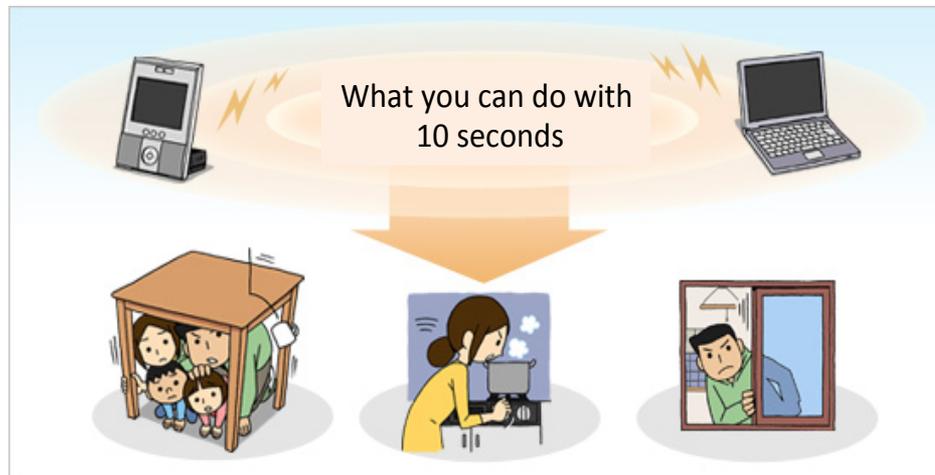
ISP Name	Access Technology for IPv6	Status	Service Type
NTT Communications	FTTx, Tunnel, Leased line	Commercial	Residential, Enterprise, Transit
Internet Initiative Japan	FTTx, Tunnel, Leased line	Commercial	Residential, Enterprise, Transit
Softbank Telecom Corporation	Leased Line, Tunnel	Commercial	Enterprise
Softbank BB Corporation	Tunnel (with 6rd on FTTx users)	Commercial	Residential
KDDI Corporation	FTTx	Commercial	Residential
NTT Docomo, KDDI, MVNOs	Mobile (LTE)	Commercial	Residential, Enterprise
ISPs using NTT East/West Internet access platform	FTTx	Commercial	Residential
DREAM TRAIN INTERNET INC.	FTTx, Tunnel	Commercial	Residential
N-plus Internet Services	FTTx, Tunnel	Commercial	Residential, Enterprise
SANNET INTERNET SERVICE	FTTx, DSL(Tunnel), Mobile(Dialup)	Commercial	Residential, Enterprise
Densan Co, Ltd.	Tunnel, Leased line	Commercial	Residential, Enterprise

This table created from information below (as of Jan. 2012):

1. IPv6 service list in Japan by Task Force on IPv4 Address Exhaustion, Japan. <http://www.kokatsu.jp/blog/ipv4/data/ipv6service-list.html>
2. IPv6 enabled ISP http://www.ipv6forum.com/ipv6_enabled/isp/approval_list.php?start=0
3. Presentation material at Internet Week 2011 by Ruri Hiromi about IPv6 residential service in Japan. (not published now, but will be in a few month)

Earthquake warning alert system

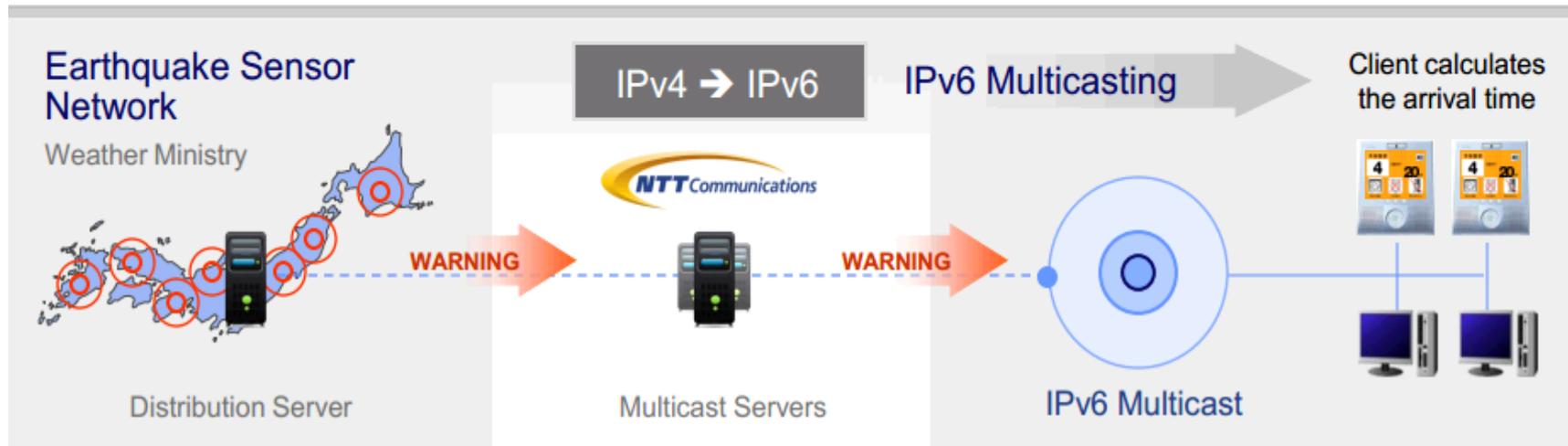
- ▶ Earthquake wave consists of two waves:
 - P: comes first, with less energy
 - S: comes later, with massive energy
- ▶ Japan Meteorological Agency has 1000+ sensors all over Japan
- ▶ Detection of the P-wave by sensors are processed at the JMA's server which identifies the probable epicenter, magnitude, and direction of wavefront travel within 2 seconds
- ▶ A partnership of NTT Communications with Halex Corp. and VAL Lab in Japan, connects our IPv6 network, information distribution server and receipt software to JMA's server so that the earthquake warning information can be distributed BEFORE the MASSIVE ENERGY hits the people, buildings and city/community infrastructure
- ▶ This system can be developed to initiate automated fire-suppression system, to automatically stop elevators, close natural gas and petroleum pipeline valves, etc
- ▶ Makes use of the IPv6 Internet and Multicast
- ▶ Commercially launched July 1, 2007



Earthquake warning alert system



The system provides a warning via an IPv6 multicast network before the earthquake arrives



NTT Plala's "Hikari TV" IPTV Service



Retransmission of Terrestrial Digital Broadcasting (HD)

'Hikari-TV' is the first RTDB provider

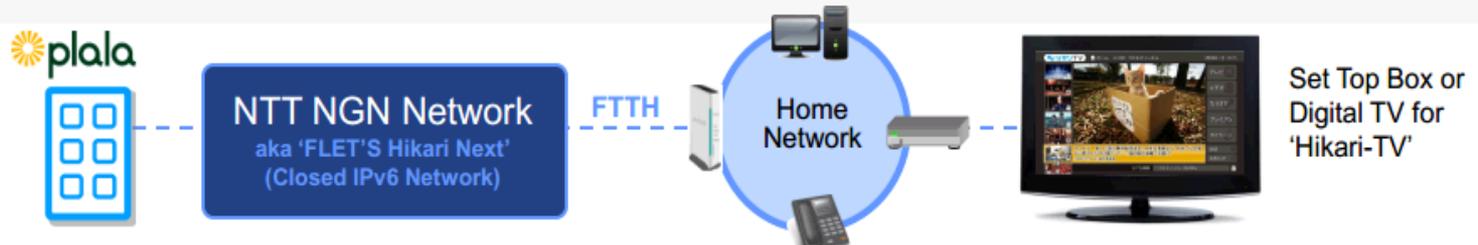
• Channel service
76 channels (including HD channels)

• VOD service
Over 10,000 titles

• Karaoke service
Over 13,000 titles



'Hikari-TV' Content Delivery Network

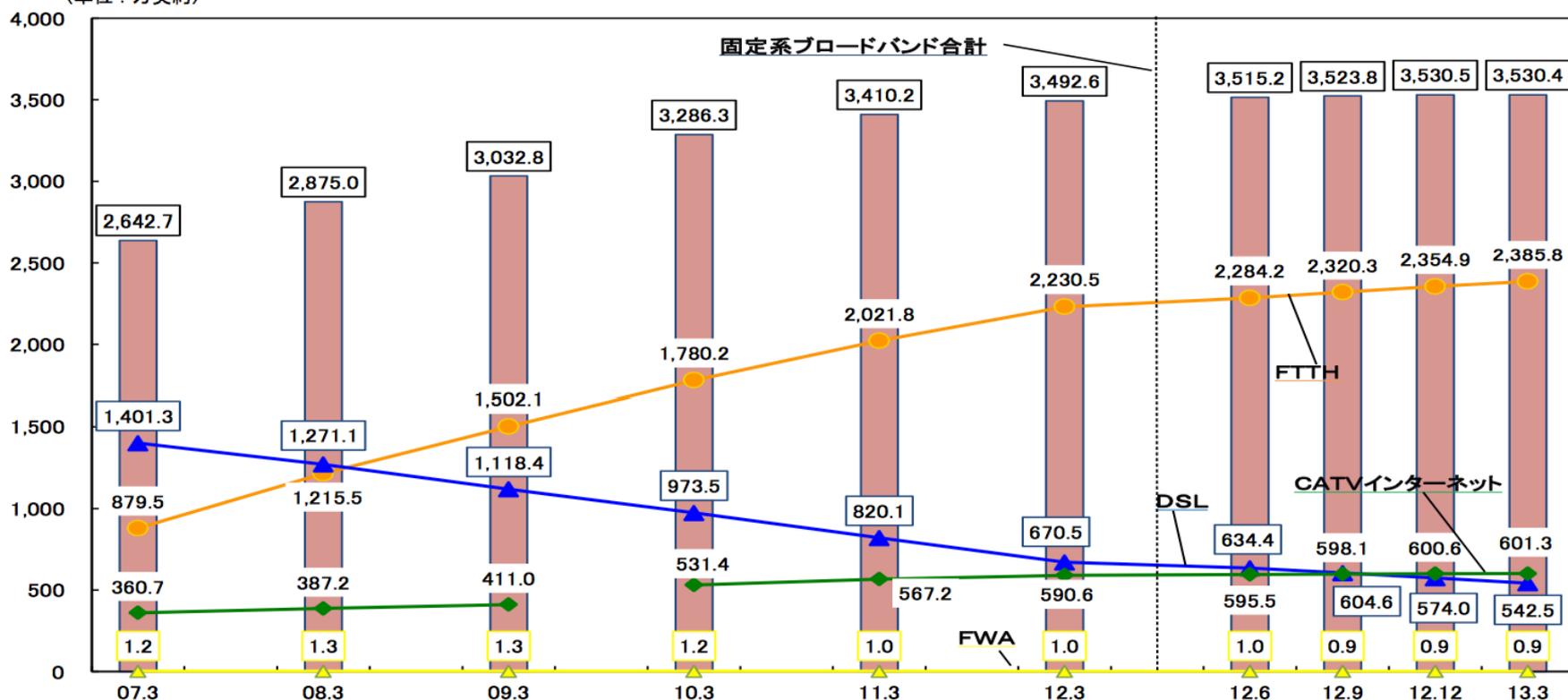


IPv6 deployment status by some measurements

Fixed line Internet access service in Japan

- Fiber service is almost 70% of the total.

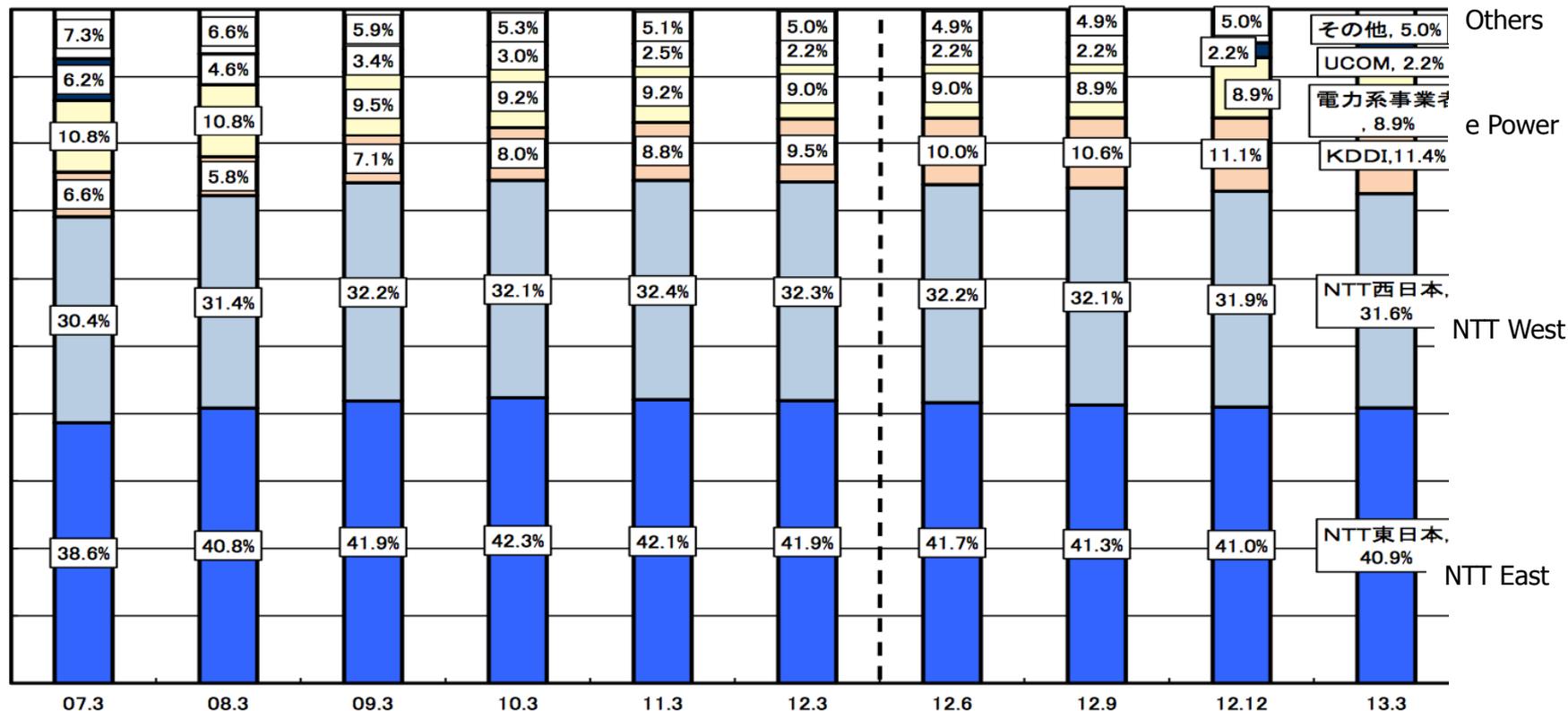
of users in 10K



From: http://www.soumu.go.jp/main_content/000235122.pdf

Fiber access line service share

- About 70% ISPs use NTT East & West Internet access platform (called 'Flets')
 - NTT's access platform supports IPoE and PPPoE to access IPv6 Internet



- Target services:
 - ISPs using NTT East & West Internet access platform (Flets)
 - For reference:
 - KDDI au Hikari (KDDI)
 - Chubu Telecommunication co, Inc. (CTC)

- % of IPv6 users in above services.

IPv6 service penetration rate in Japan

	Flets Hikari Next	参考	
		KDDI au Hikari	CTC Comifa Hikari
2012.12	0.8%	55%	24%
2013.03	1.4%	61%	29%
2013.06	2.0%	63%	36%

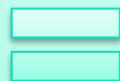
Calculation Method for "Flet's Hikari Next"

IPv6 Readiness
ratio of "Flet's
Hikari Next"

Number of
subscribers of
IPoE service



Supposed number
of actual users of
PPPoE service



Total Subscribers of "Flet's Hikari Next"

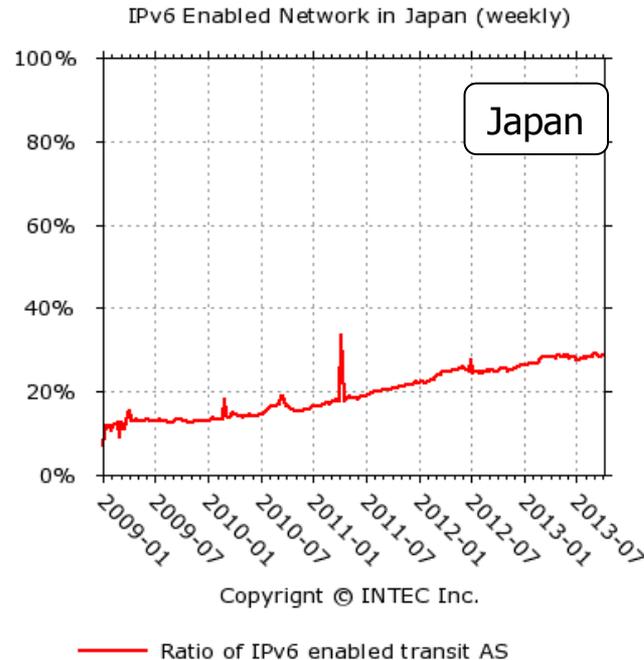
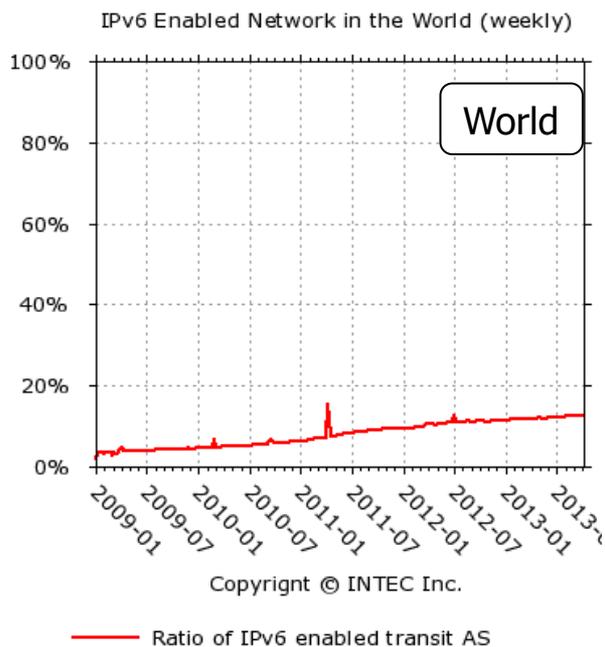
IPv6 Traffic to Google



Rank	Name	ASNs	IPv6
1	KDDI	<u>2516</u>	17.75%
2	SoftBank BB	<u>17676</u>	2.23%
3	ctc	<u>18126</u>	27.34%
4	IIJ	<u>2497</u>	1.76%
5	Sony Global Solutions	<u>9619</u>	99.01%
6	TDNC	<u>9354</u>	3.50%
7	So-net	<u>2527</u>	0.54%
8	iTSCOM	<u>9365</u>	3.29%
9	BIGLOBE	<u>2518</u>	0.43%
10	star cat	<u>17529</u>	12.86%
11	bit-drive	<u>9600</u>	6.86%
12	UCOM	<u>17506</u>	0.47%
13	SINET	<u>2907</u>	1.65%
14	Yahoo! Japan	<u>55898</u>	64.20%
15	OCN / plala	<u>4713</u>	0.02%
16	FreeBit	<u>4691</u> , <u>10013</u>	0.22%
17	K-Opticom	<u>17511</u>	0.11%
18	@nifty	<u>2510</u>	0.11%
19	TOKAI	<u>10010</u>	0.09%
20	Keio University	<u>38635</u>	11.19%

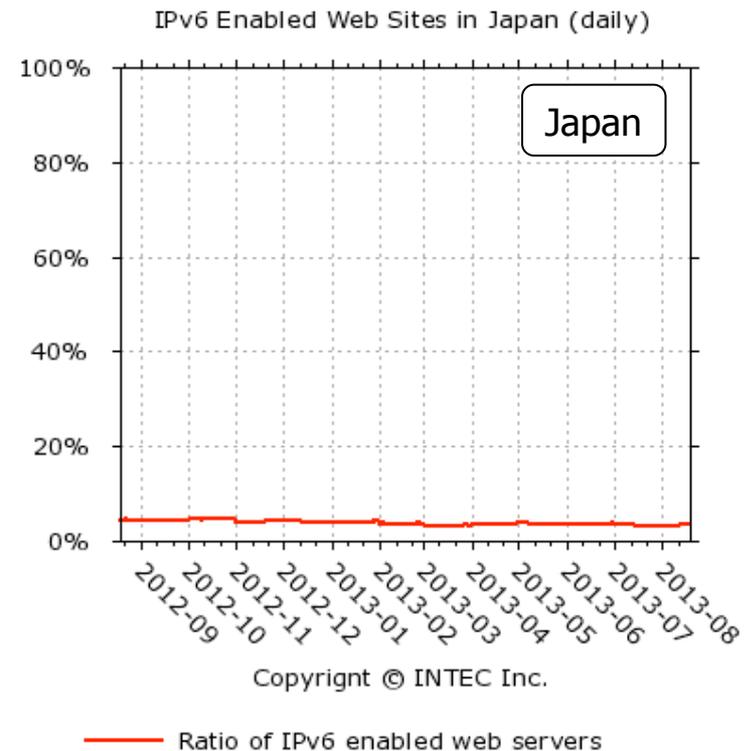
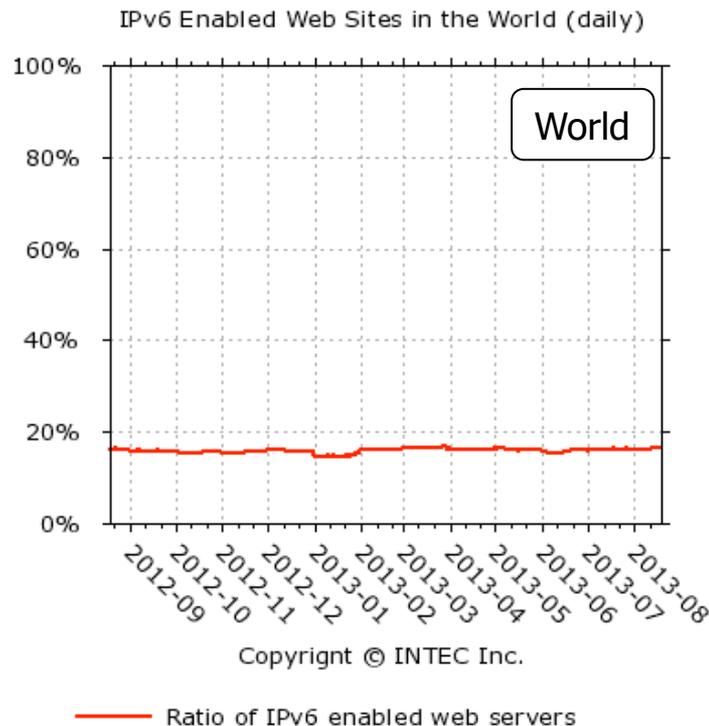
- This table shows the amount of IPv6 traffic from the major networks (ASNs) in Japan to Google on 21st August , 2013.
- Absolute number of IPv6 traffic is ranked higher.
- Of the total number of access, right-most column shows the proportion of the IPv6 access.

- The number of IPv6 enabled of Transit AS in BGP routing tables.



IPv6 penetration rate : web servers

The number of IPv6 enabled site in the top 500 web sites which is published by Alexa Internet, Inc.



<http://www.inetcore.com/project/metrics/index.html.en>

- IPv6 Service has been deploying smoothly in Japan
- Need to tackle:
 - To introduce IPv6 to existing IPv4 only users
 - To promote IPv6 in Contents side
 - To deploy new services to utilize IPv6 features

Questions?