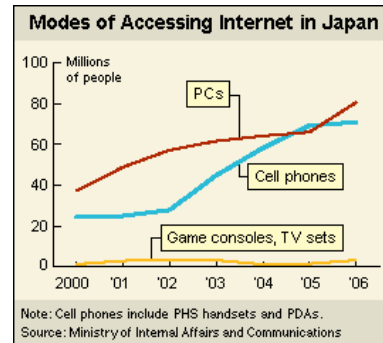


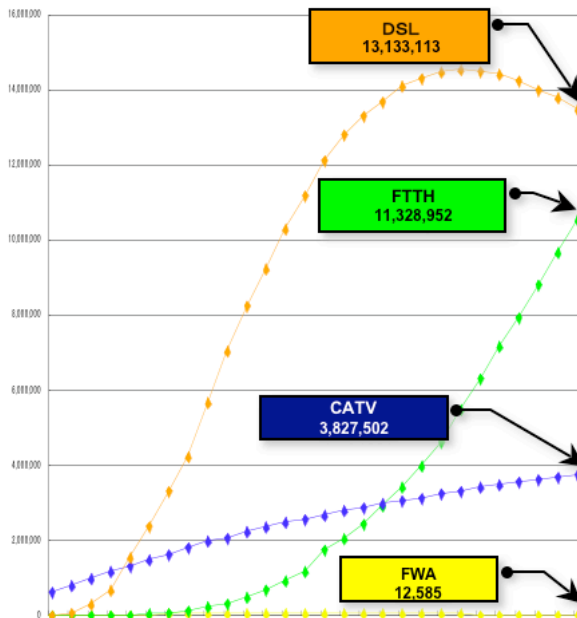
**Open Fiber session Freedom to Connect: Japan** (background note)  
 March 31, 2008. Adam Peake ajp@glocom.ac.jp

Population: 127 million (US 303 million)  
 Households: 51 million  
 GDP (PPP): \$33k (US \$43k)

Mobile subscribers: 101,376,300 (Feb 08)  
 3G subscribers: 85,698,100  
 Mobile Internet access contracts: 87,767,500  
 40m contactless payment wallet phones  
 22m "1seg" mobile terrestrial digital TV phones  
 Mobile ARPU, Dec. 2006: ¥6,662 (voice ¥4,670, data ¥1,992, % of data increasing)



**[Number of Broadband Service Users]**



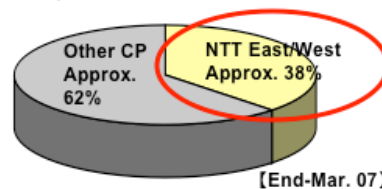
**Residential broadband (Dec 07)**

Total: 28,289,567  
 55% households

**December 2000**

Cable 625,000, DSL 9,732  
 DSL peak, March 2006: 14,517,859

**[Proportion of DSL Subscribers]**



NTT 70%+ of FTTH mkt.  
 (increasing)  
 NTT total broadband 48%

- Unbundling and open access: interconnection charge introduced autumn 2000 (impact mid 2001) dry copper approx \$12/mo (LRIC). Subscriber fiber based on forward looking 7 year estimate, approx ¥5,000/mo. Revised down April 2008, 3 year forward looking estimate. 2011 revision expected to use historic costs. Interoffice fiber approx \$20/meter/mo.
- How much/month: ADSL 1 Mbps - 50Mbps approx. \$25-\$35 (no phone, equipment charge inc.), average inclusive price \$40. Fiber: basic apartment fiber approx. \$40 including phone etc. 100Mbps fiber to single home, including phone and equipment below \$70. 40-50% households are apartment/MDU. Apartment either fiber (100Mbps) or VDSL (50, 70 or 100Mbps). Little difference in price between DSL and fiber, cheapest for both, inclusive of phone and equipment approx. \$35/month.
- Residential broadband (RBB) traffic increased 2.5 x in past 3 years, total RBB traffic Nov 2007 estimated at 812.9Gbps. RBB, approx 2/3 of ISP backbone traffic.

- Nov 2006, top 4% of users (75% inbound and 60% outbound traffic) average 2.5GB/day (230Kbps). The top, 200GB/day (19Mbps). Late evening traffic peak to 90% of network capacity. Mainly domestic P2P application Winny.

### **Current issues:**

#### Japan & Network Neutrality

Network neutrality principles introduced as an amendment to the "New Competition Policy Program 2010" in November 2007 and are official policy:

- IP networks should be accessible to users and easy to use, allowing ready access to content and application layers
- IP based networks should be accessible and available to any terminal that meets relevant technical standards and should support terminal-to-terminal (or "end-to-end") communication.
- Users should be provided with equality of access to telecommunications and platform layers at a reasonable price. ("users" refers to end users and content providers and other companies conducting business using IP networks.)

Network neutrality also includes the concept of utilizing IP networks with the proper allocation of costs, and without discrimination.

#### Japan & Traffic Shaping

Significant IP traffic volumes, mainly from P2P and a small number of heavy users caused some ISPs to begin packet shaping. ISPs claim they began shaping so the current flat-rate fee system could be maintained.

A working group of four telecom business associations (Japan Internet Providers Association, Telecommunications Carriers Association, Telecom Service Association, Japan Cable and Telecommunications Association, and the ministry as observer) was created in September 2007 to develop a "Guideline for Packet Shaping". Guideline available in draft, public comment until April 14, 2008.

The guideline covers basic conditions when packet shaping is permitted, including measures to cancel heavy users contracts. Based on the underlying principle that ISPs should increase network capacity in line with increases in network traffic: packet shaping should only be allowed in exceptional situations. When implemented, packet shaping should be justified by objective criteria such as QoS of general users being degraded by traffic from other applications, e.g. P2P. Secrecy of communications should be maintained in accordance with the Telecom business law. Users should be informed about their ISP's packet shaping policy in their contract terms and conditions. ISPs will also required to provide relevant information to content providers and other ISPs about any shaping.

- Arbitrary use of packet shaping must be avoided.

The guideline may apply to:

- Traffic restrictions on specific applications, e.g. P2P
- Traffic restrictions or cancellation of contract with heavy users who exceed certain traffic thresholds

How to cope with increased video content (user generated and other), information sharing systems among ISPs and content providers, and discussion of cost sharing models will be considered later.

Source files for much of this information online at <http://www.too-much.tv>