

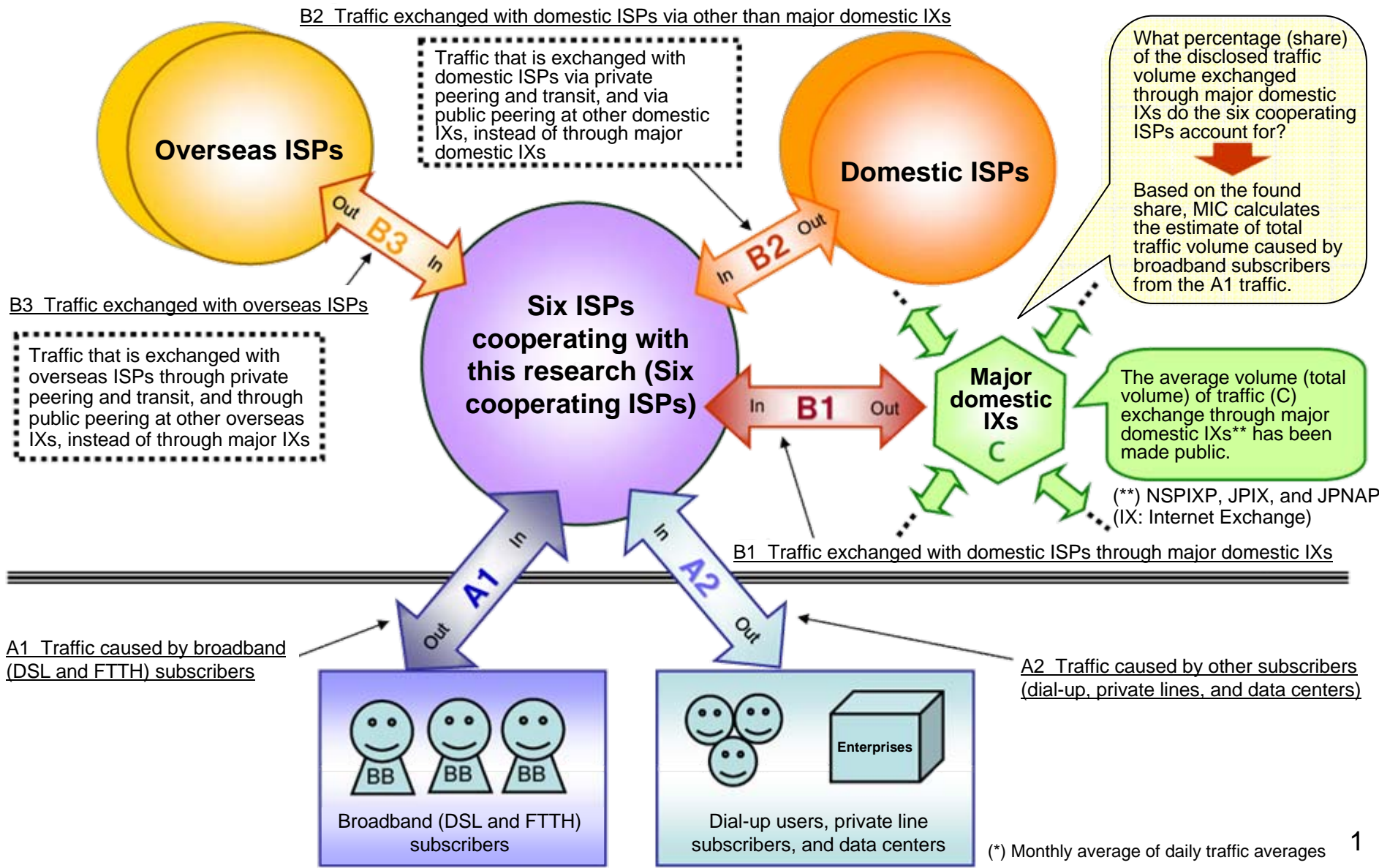
Understanding the Total Volume of Internet Traffic in Japan

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1. Tabulated Types of Traffic*

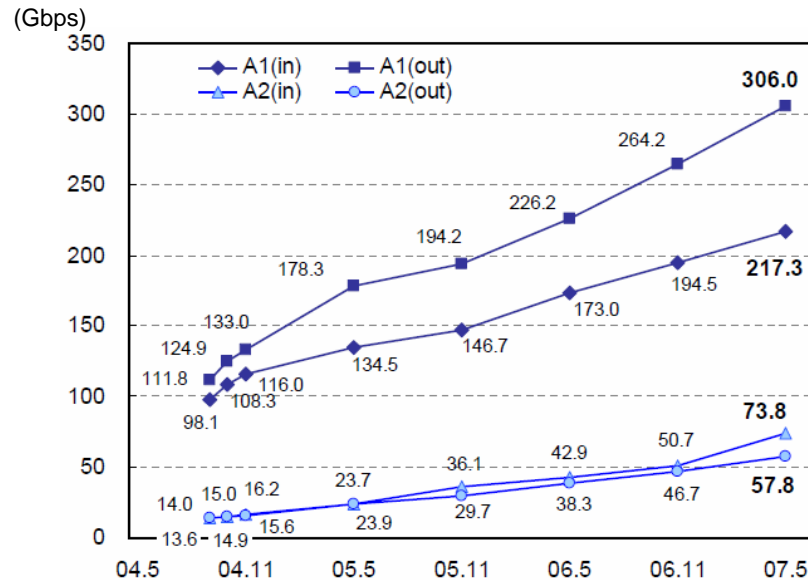


2. Tabulation of Traffic by Subscriber Type

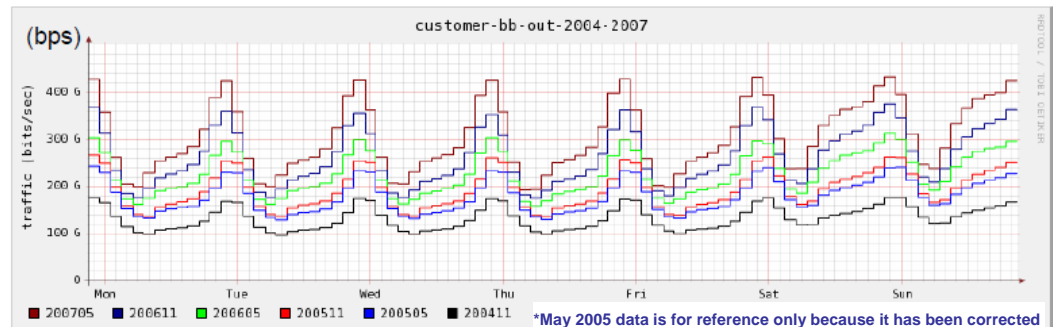
- Traffic downloaded by broadband subscribers continues to show a healthy increase, passing 300 gigabits per second (monthly average).
- The "traffic peak" is around 21:00 and 23:00, and narrowing year by year.

1. Traffic caused by broadband subscribers [A1] continues to show an upward trend, with the monthly average for downloaded traffic at 306.0 gigabits per second for May 2007.
2. In both [A1] and [A2], the difference between the volume of downloaded traffic (indicated by Out) and that of uploaded traffic (indicated by In) continues to widen. Consequently, MIC believes that download usage has been increasing.
3. The lowest value for hourly traffic volume (download) of broadband subscribers [A1] has approximately doubled in two and one-half years (from approx. 100 gigabits per second to approx. 200 gigabits per second), and the peak value has increased approximately 2.4 times over the same period (from approx. 180 gigabits per second to approx. 440 gigabits per second). Consequently, the ratio of the bottom to the peak has increased approximately 1.2 times (from approx. 1.8 to approx. 2.3).
4. In May 2007, the "traffic peak" remains at around 21:00 and 23:00, as before, and narrowing year by year.

Change in traffic volume (monthly average) by subscriber type



Change in hourly traffic volume caused by broadband subscribers

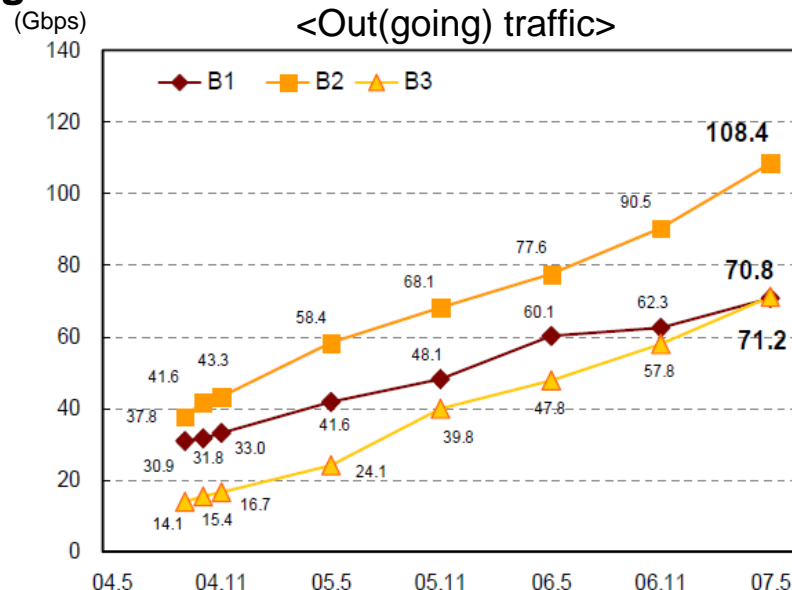
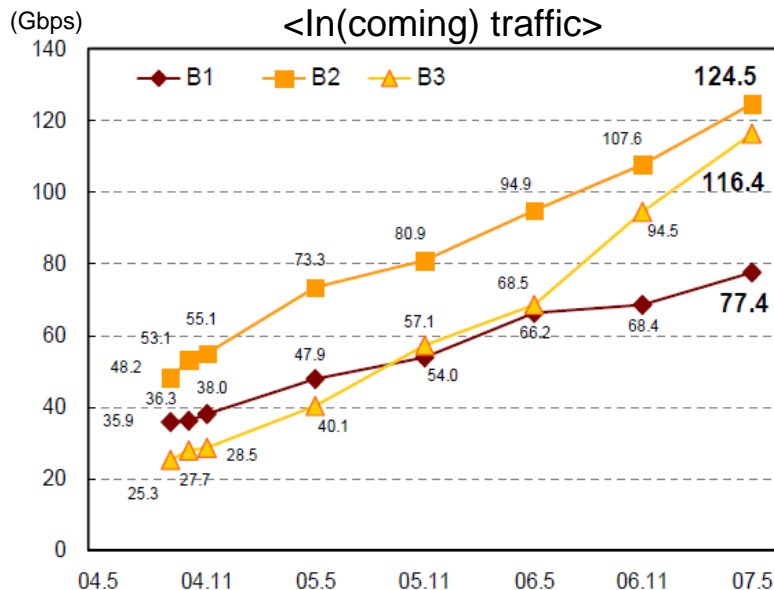


3. Tabulation of Traffic Exchanged between ISPs

- The volume of traffic that is not exchanged through major domestic IXs (mainly exchanged through private peering) exceeds that of traffic that is exchanged through major domestic IXs, and the difference is increasing.
- The volume of traffic flowing from overseas ISPs has risen sharply since November 2006, increasing approximately 1.7 times over the past year. Usage for such as video downloading is estimated to be rising.

1. The volume of traffic ([B1, In/Out]) exchanged with domestic ISPs through major domestic IXs has slightly strengthened the tendency to increase. The volume of traffic [B2, In/Out] exchanged with domestic ISPs and through other than major domestic IXs showed increases similar to those in the past (the volumes for [B2, In] and [B2, Out] increased by approximately 1.3 times and by approximately 1.4 times, respectively).
2. The volume of traffic [B3, In] flowing from overseas showed a sharp increase since November 2006, increasing by approximately 1.7 times in one year. On the other hand, the increasing rate of traffic flowing to overseas did not change greatly and the volume of incoming traffic reached approximately 1.6 times that of outgoing traffic. With these facts, MIC infers that usage such as domestic users downloading of video from overseas servers is increasing.

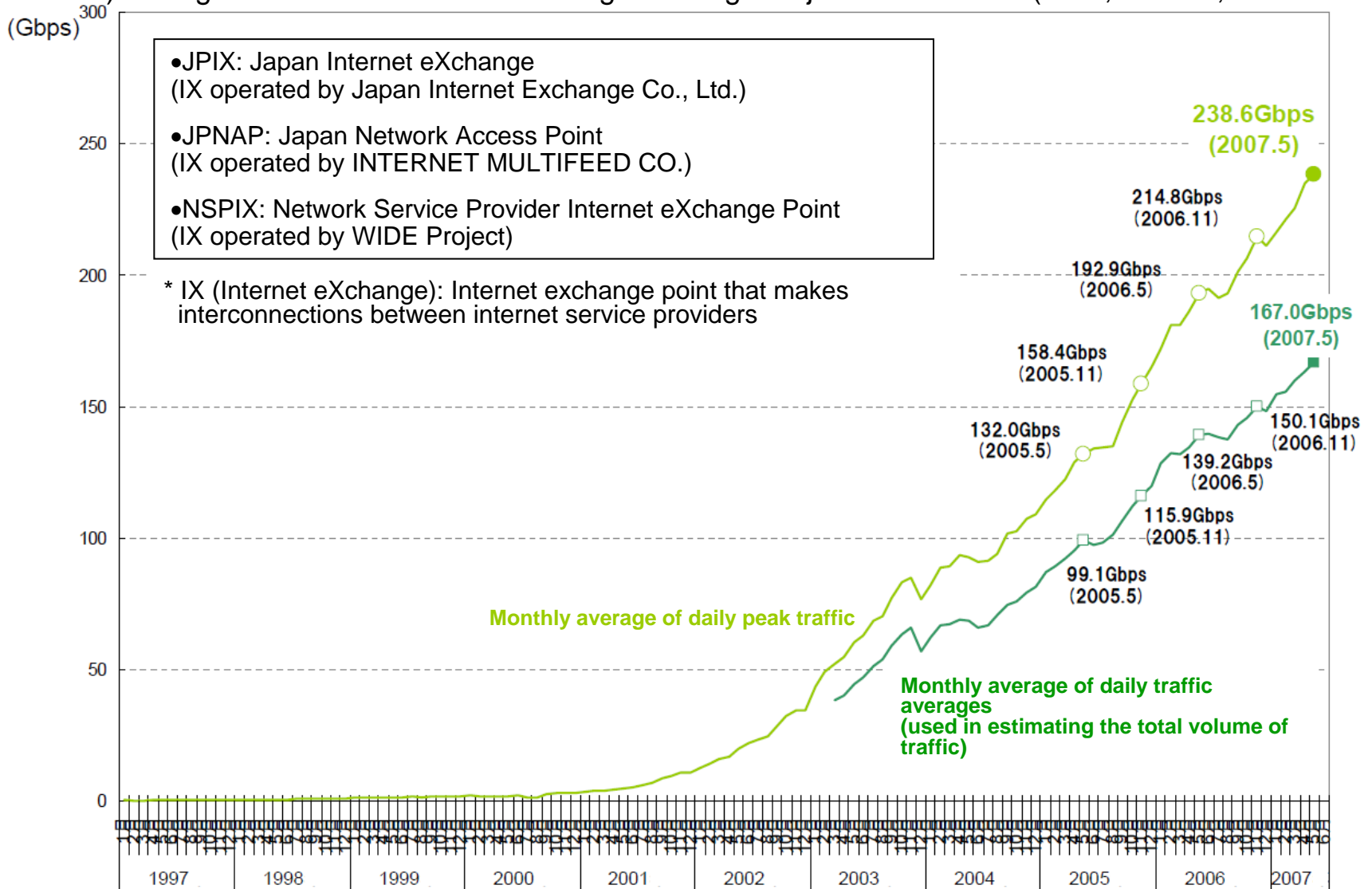
Traffic Exchanged between ISPs



[B1] Traffic exchanged with domestic ISPs through major domestic IXs
 [B2] Traffic exchanged with domestic ISPs through other than major domestic IXs
 [B3] Traffic exchanged with overseas ISPs

(Reference) Tabulation of Traffic Exchanged at Major Domestic IXs

(Reference) Change in Volume of Traffic Exchanged through Major Domestic IXs (JPIX, JPNAP, and NSPIXP)



4. Estimating the Total Volume of Traffic Caused by Broadband Subscribers in Japan

- Six cooperating ISPs account for 42.4% of the traffic exchanged through major domestic IXs (the percentage has remained unchanged over the past year).
- The total volume of traffic downloaded by broadband subscribers in Japan is estimated to be 721.7 gigabits per second on the assumption that the above percentage is regarded as the share of broadband subscribers. Consequently, MIC infers that traffic on a scale similar to this is flowing on the Internet.

1. The volume of traffic [B1] exchanged with the six cooperating ISPs through major domestic IXs accounts for 42.4% of the total volume of traffic [C] exchanged through the major domestic IXs. MIC assumes this percentage to be the share of the six cooperating ISPs in the number of broadband subscribers in Japan.
2. By calculating the total volume of traffic downloaded by broadband subscribers in Japan with the share by the six cooperating ISPs and the volume of traffic [A1] caused by their broadband (DSL and FTTH) subscribers, MIC estimates that traffic is flowing at an average rate of 721.7 gigabits per second on the Internet.

$$306.0 \text{ gigabits per second} \div 42.4\% = 721.7 \text{ gigabits per second}$$

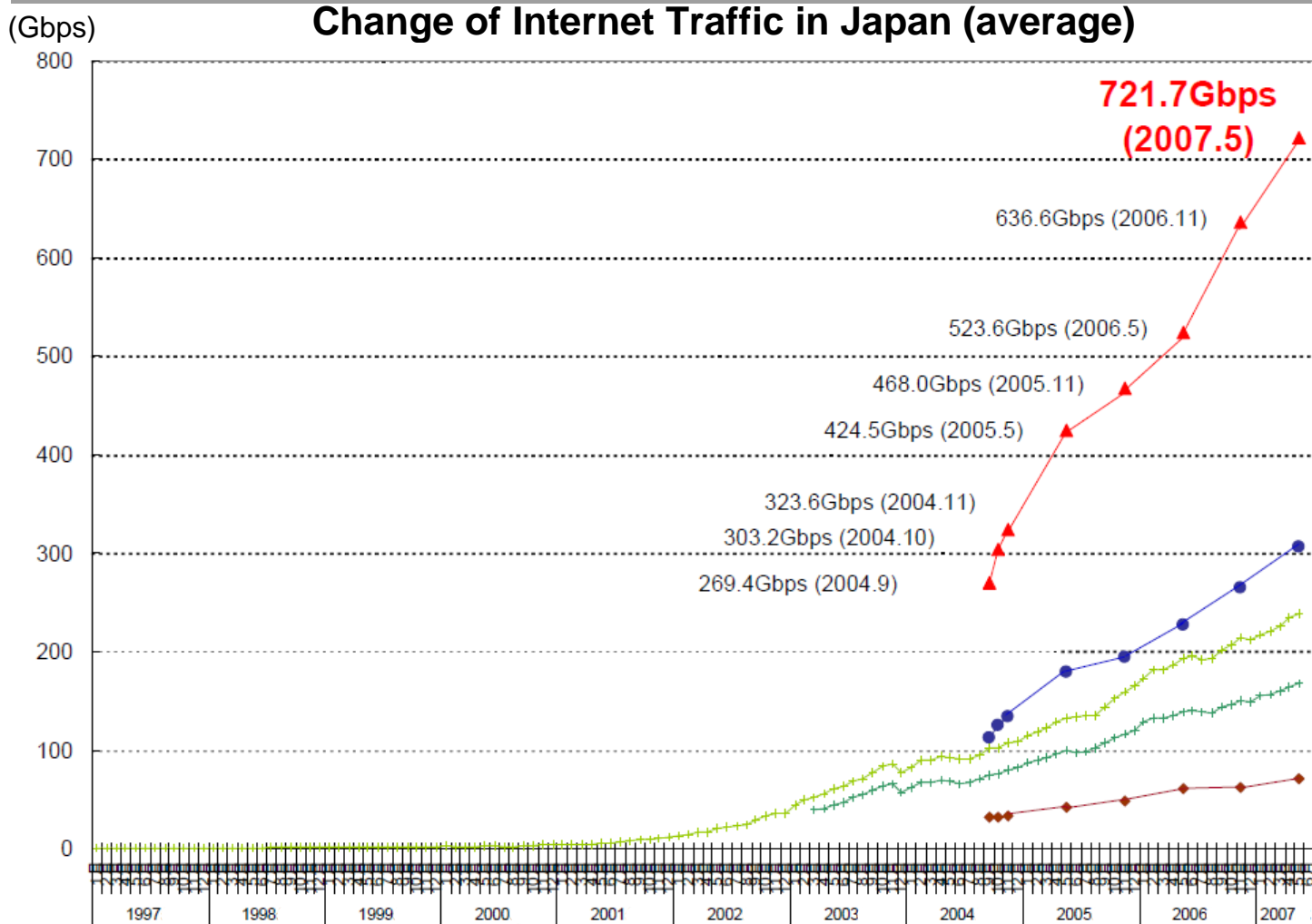
3. Comparing this estimate and the value in May 2006 with the one from May 2005 indicates that the total increased approximately 1.7 times in two years and approximately 1.4 times in one year.

Estimating the Total Volume of Traffic Caused by Broadband (DSL and FTTH) Subscribers in Japan

	[C] Total volume of traffic exchanged through major domestic IXs (Incoming)	[B1] Volume of traffic exchanged with six domestic ISPs through major domestic IXs (Outgoing)	Share of six cooperating ISPs (calculated by dividing B1 with C)	[A1] Volume of traffic downloaded by broadband (DSL and FTTH) subscribers to six cooperating ISPs	Total volume of traffic caused by broadband (DSL and FTTH) subscribers (estimate)
May 2005	99.1	41.6	42.0	178.3	424.5
May 2006	139.2	60.1	43.2	226.2	523.6
May 2007	167.0	70.8	42.4	306.0	721.7

5. (Summary) Change of Internet Traffic* in Japan

- Traffic is flowing on the Internet in Japan on the scale of 700 gigabits per second and has increased approximately 1.4 times in one year.
- Assuming that this trend continues, Internet traffic is expected to reach the 1 terabit per second scale by around May 2008.



Total volume of traffic downloaded by broadband subscribers in Japan (estimate)

Total volume of traffic caused by broadband subscribers of six cooperating ISPs [A1]

(Reference) Peak value of traffic exchanged through major domestic IXs

Total volume of traffic exchanged through major domestic IXs [C]

Total volume of traffic exchanged with six cooperating ISPs through major domestic IXs [B1]

(* Monthly average of daily traffic averages