A Suggestion for Asian Peering Enhancement

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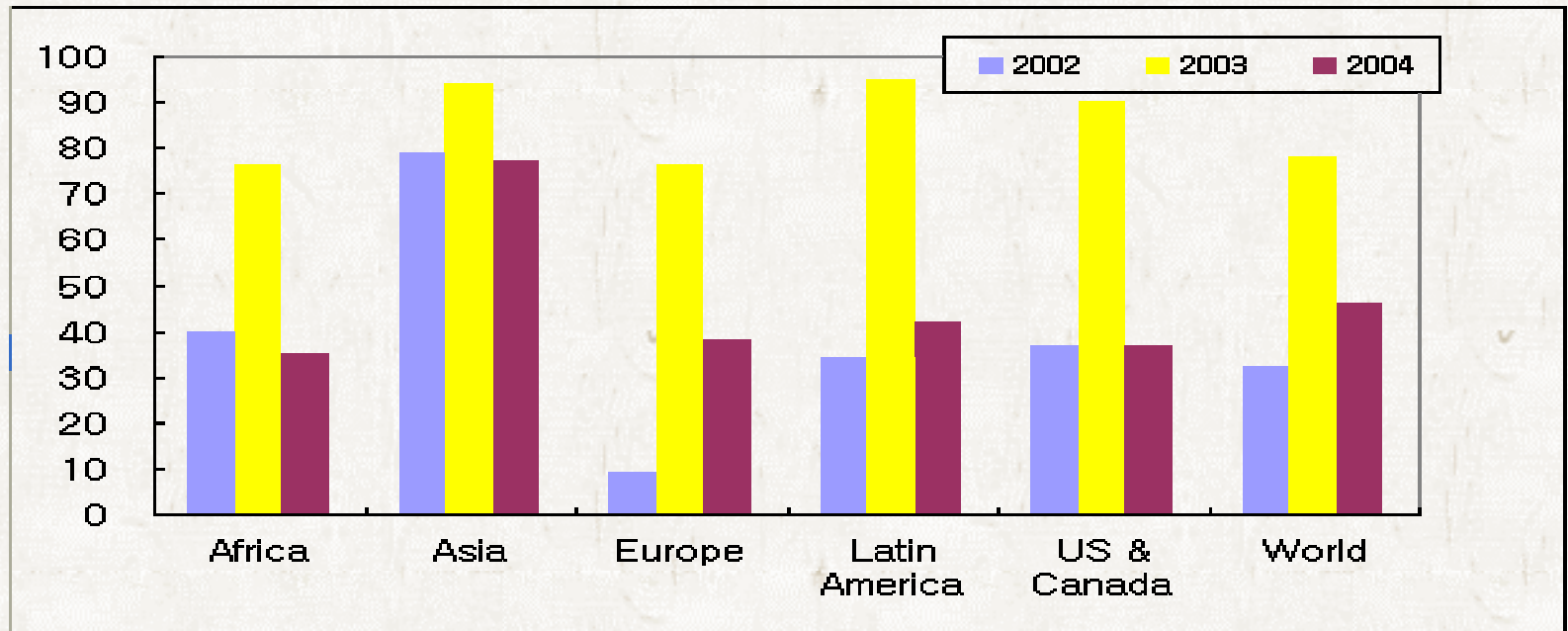
APRICOT

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1. International Internet Backbone Growth

❑ International Internet Capacity

➢ World backbone capacity expansion rate: 46% in 2004 (78% in 2003)


(Source: TeleGeography Research)

❑ Asia International Internet Capacity

➢ Asia Internet capacity expansion rate: 77% in 2004 (37% of US & Canada)

➢ Asia's share of the world backbone capacity: only 12%.

2. Asia Pacific Subscribers Growth

❑ Asia Pacific Broadband Internet Subscribers

  ➢ DSL and Cable Modem subscribers in Asia Pacific will rise:

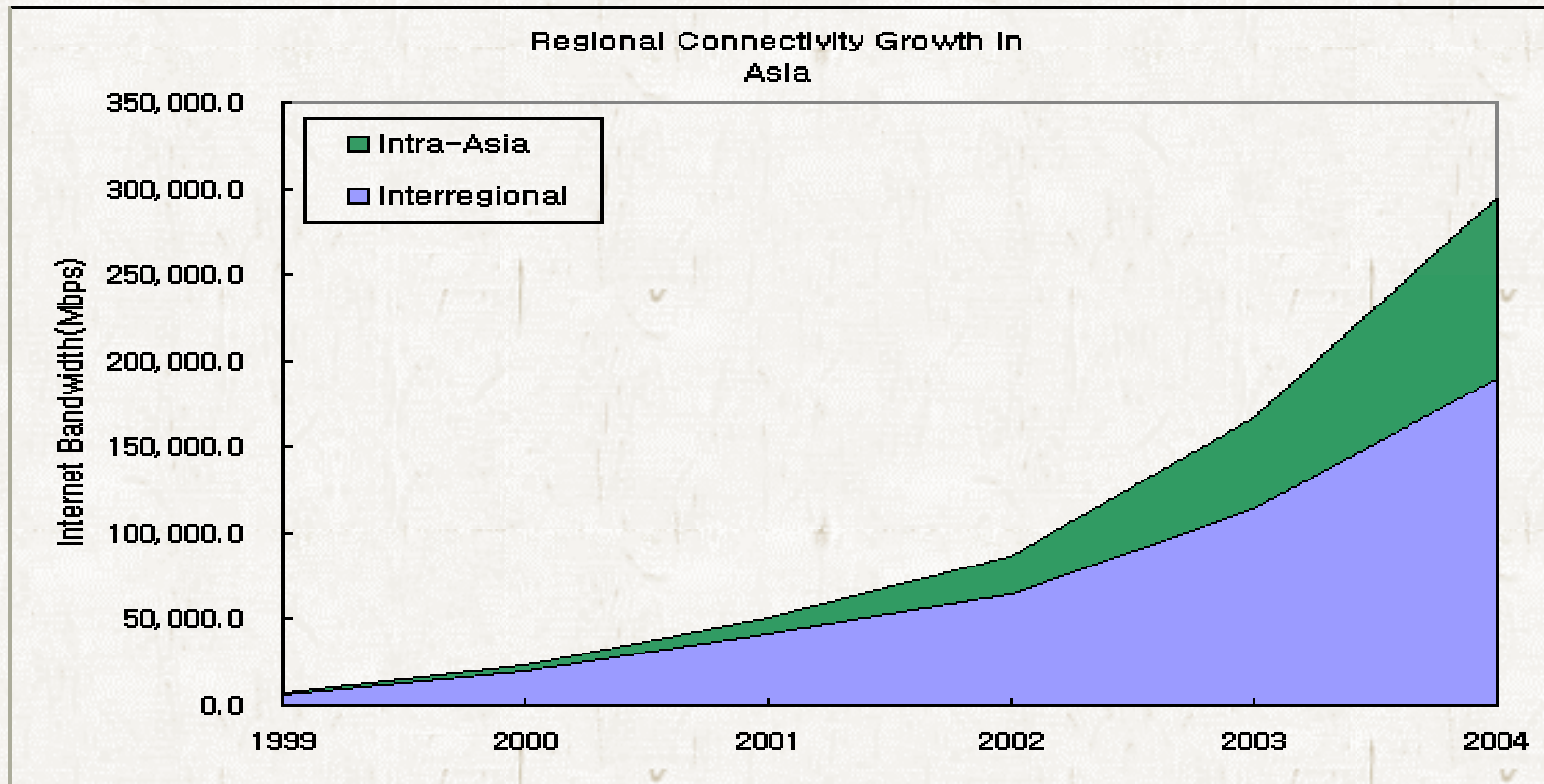 24 mil at the end of 2002 → 96 mil by 2007 (CAGR: 34%)
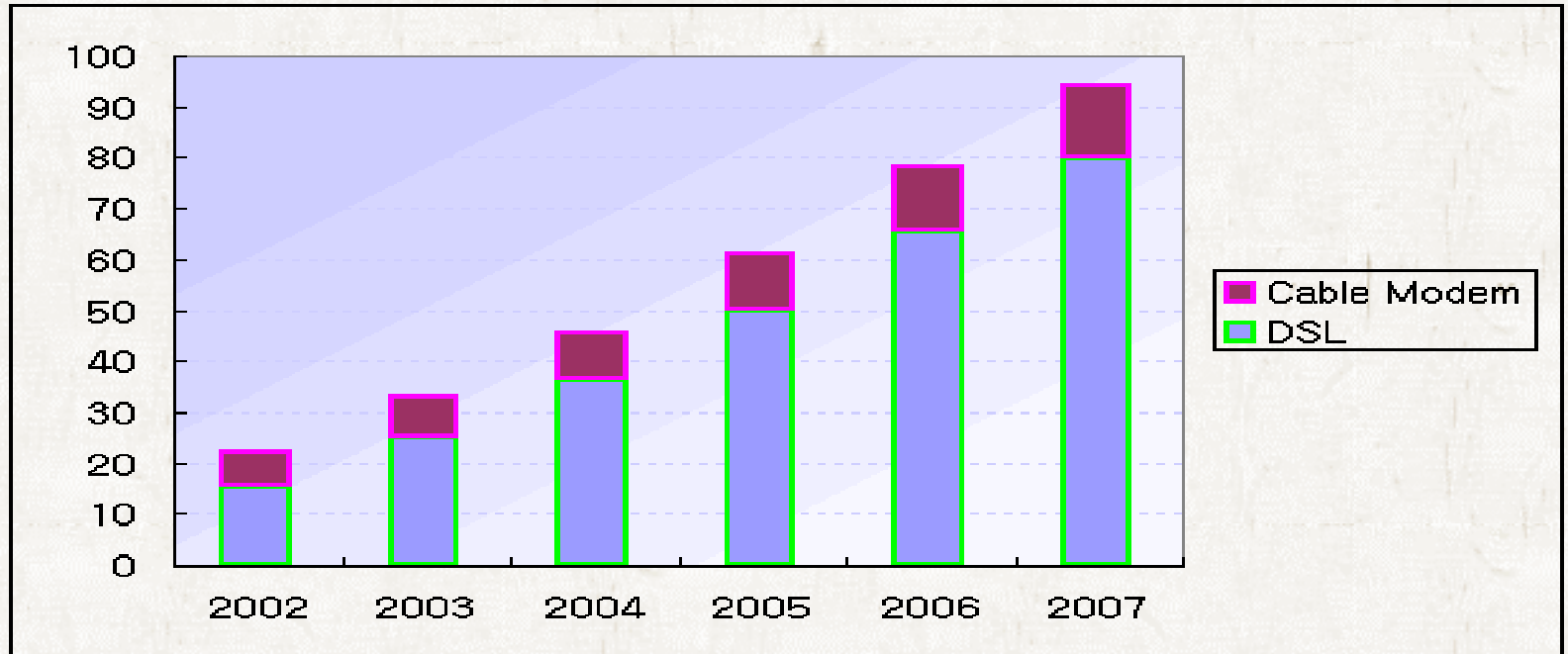
(Source: Yankee Group, 2003 OCT)

➢ Subscribers in China will rise: Average 90% every year

➢ Subscribers in Japan and India will rise: Average 40% every year

3. Asia Regional Capacity Growth

❑ Asia International Internet Capacity Trends

  ➢ Strong growth occurred on intra-Asian links

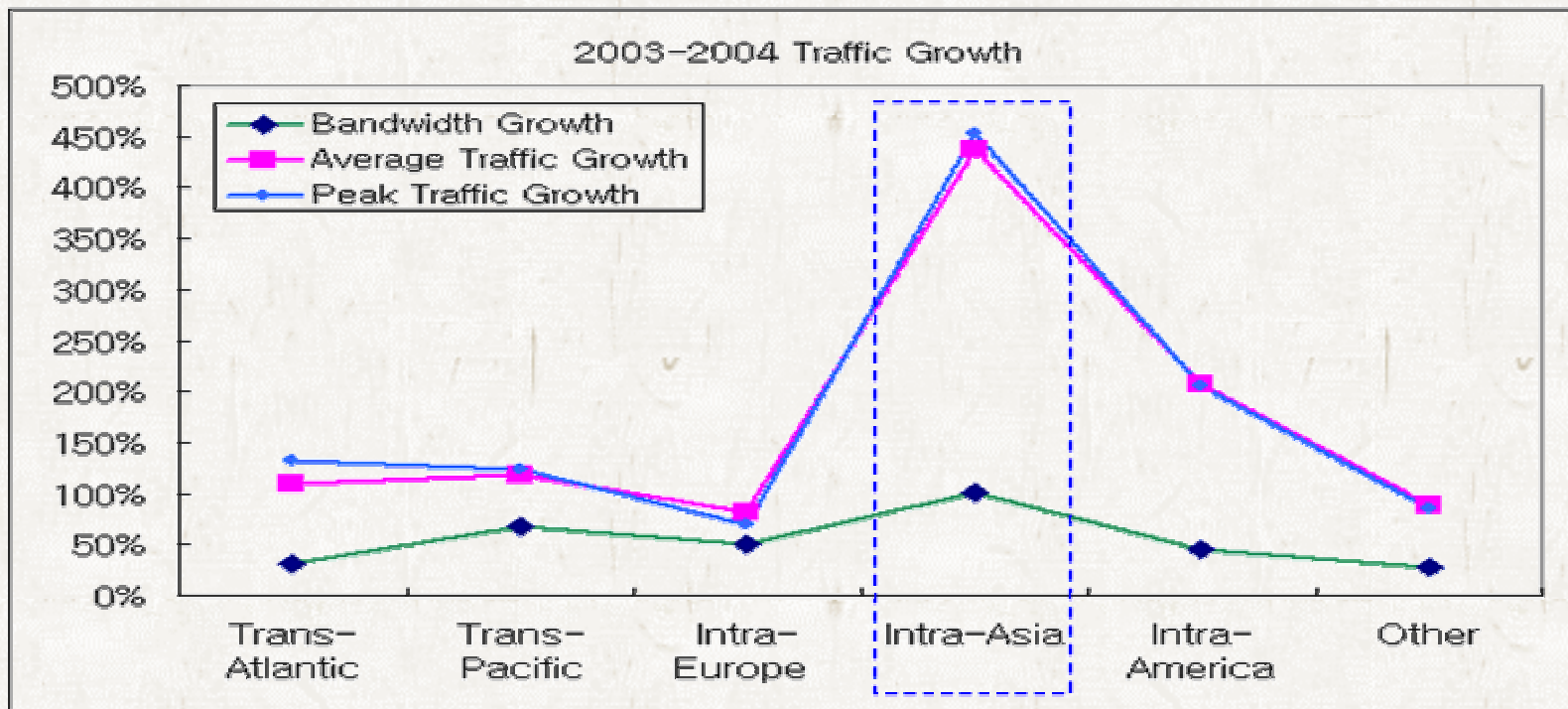 ➢ Asian capacity connected to US accounted for almost 2/3

Regional Connectivity Growth in Asia

- Intra-Asia
- Interregional

Internet Bandwidth(Mbps)

350,000.0
300,000.0
250,000.0
200,000.0
150,000.0
100,000.0
50,000.0
0.0

1999 2000 2001 2002 2003 2004

(Source: TeleGeography Research)

4. Traffic Trends(1)

❑ Global traffic trends

➢ The average Internet traffic grew 115 % between 2003 and 2004

2003–2004 Traffic Growth

Legend:
- Bandwidth Growth
- Average Traffic Growth
- Peak Traffic Growth

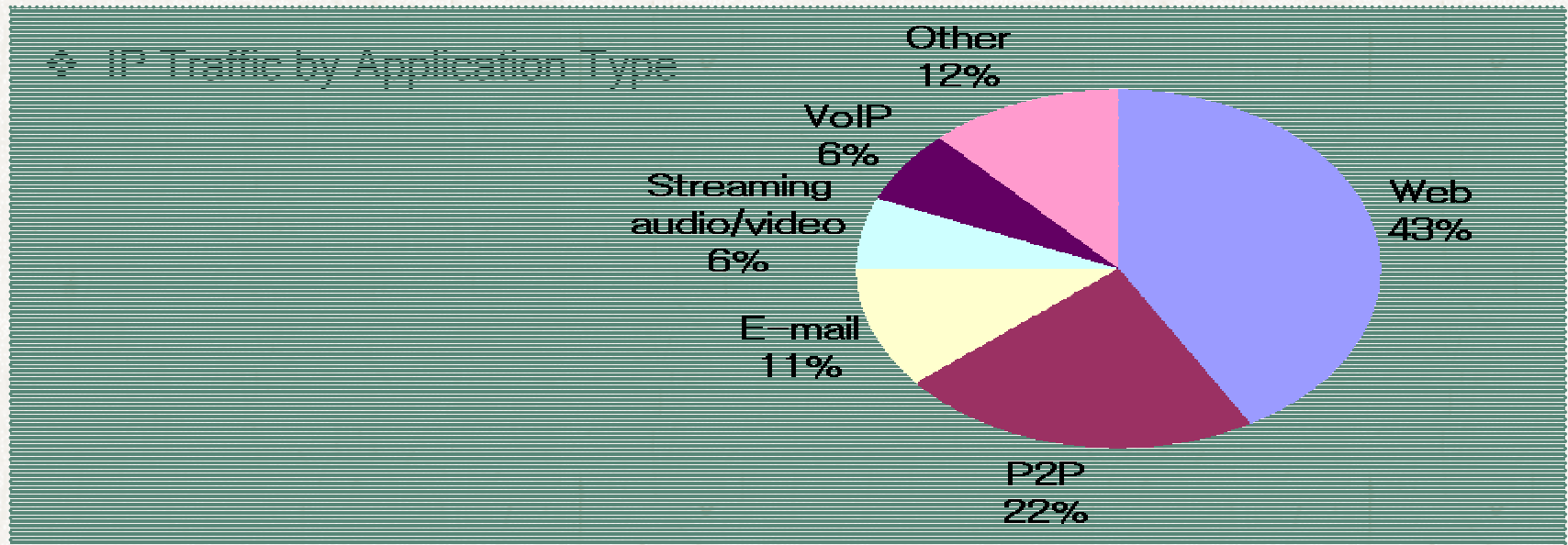Categories: Trans-Atlantic, Trans-Pacific, Intra-Europe, Intra-Asia, Intra-America, Other

(Source: TeleGeography Research)

➢ Traffic growth on trans-Pacific routes : 119%

➢ Traffic growth on intra-Asian links : 434%
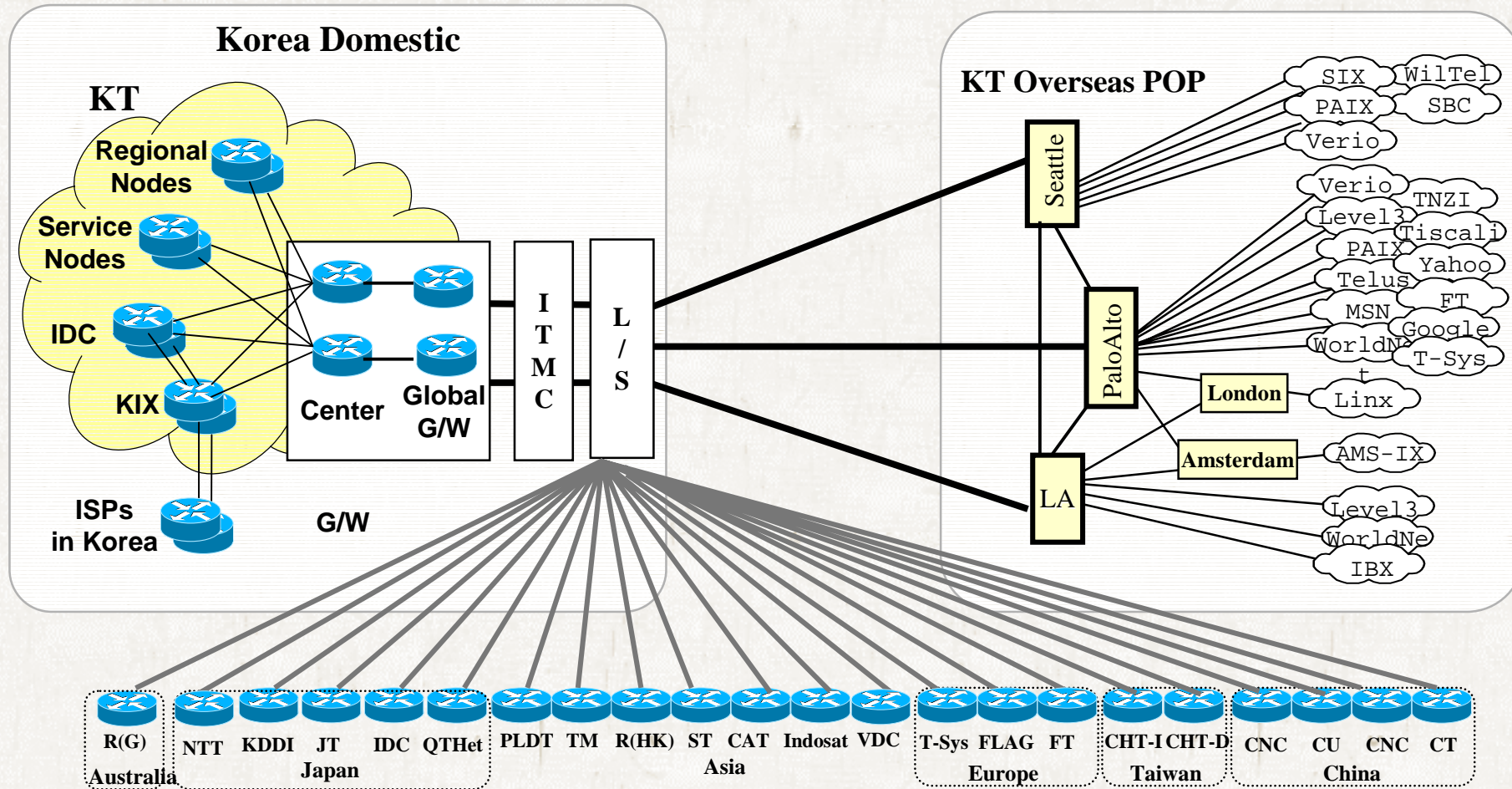
4. Traffic Trends(2)

❑ Asia traffic trends

➢ Average utilization rate on intra-Asian links: 16% in 2003 → 42% in 2004

➢ Intra-Asian traffic growth is caused by:

✓ new users growing

✓ deployment of high-speed access

✓ peer-to-peer file sharing

❖ IP Traffic by Application Type

Other 12%

VoIP 6%

Streaming audio/video 6%

E-mail 11%

Web 43%

P2P 22%

(Source: TeleGeography Research)
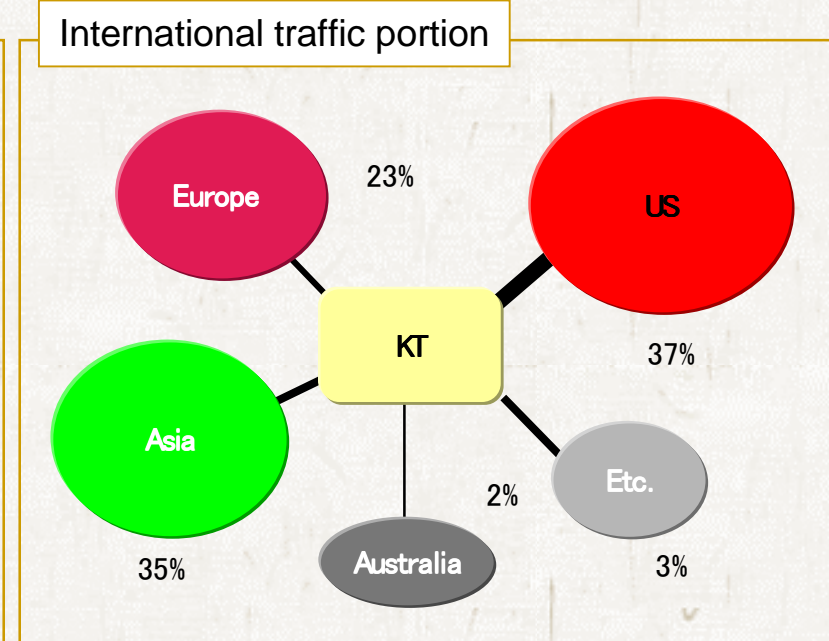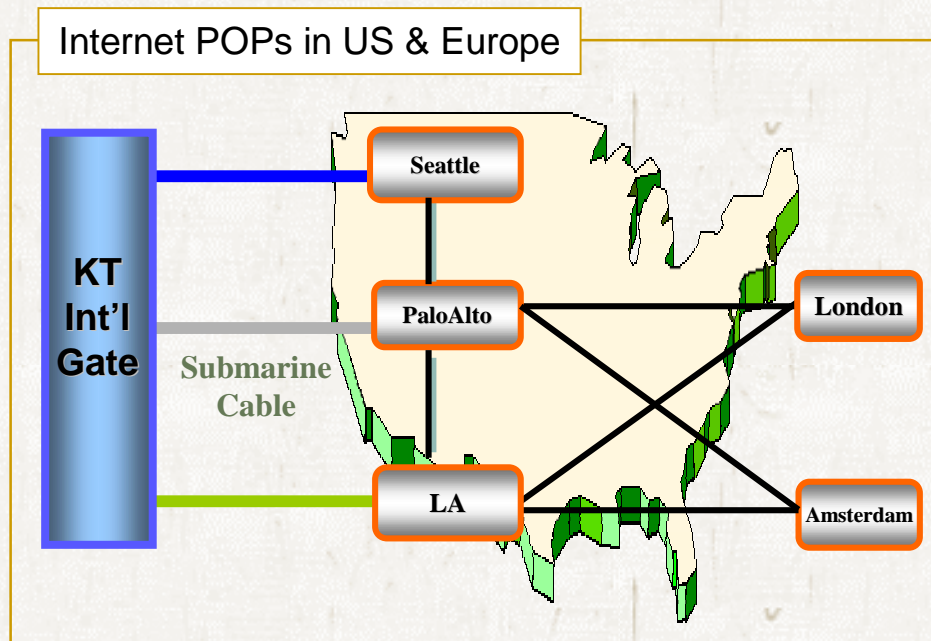
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❖ KT Domestic & International network configuration

5. KT International Network(2)

❑ KT International Backbone Network Introduction

➢ KT still has a high dependent priority on US networks.

➢ KT has operated five POPs in US and Europe.

➢ Using the cable capacity owned by KT from Korea to US

➢ Using leased links from US to Europe.

Internet POPs in US & Europe

KT Int'l Gate

Submarine Cable

Seattle

PaloAlto

LA

London

Amsterdam

International traffic portion

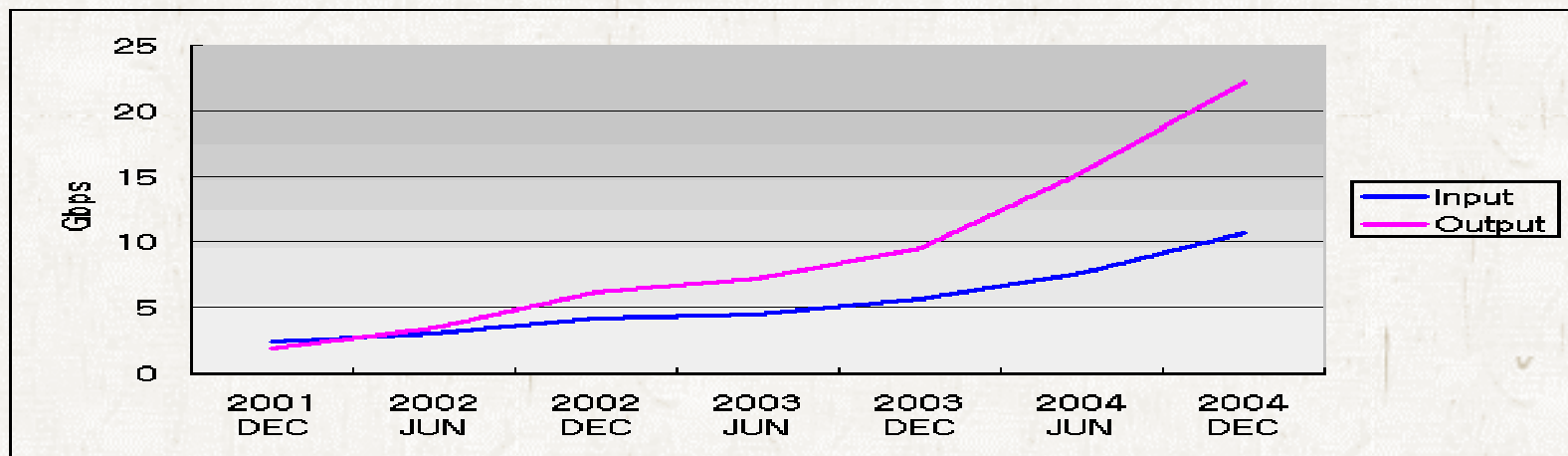Europe 23%

US

KT

Asia

37%

Australia 2%

Etc.

35%

3%

6. KT Traffic Trends(1)

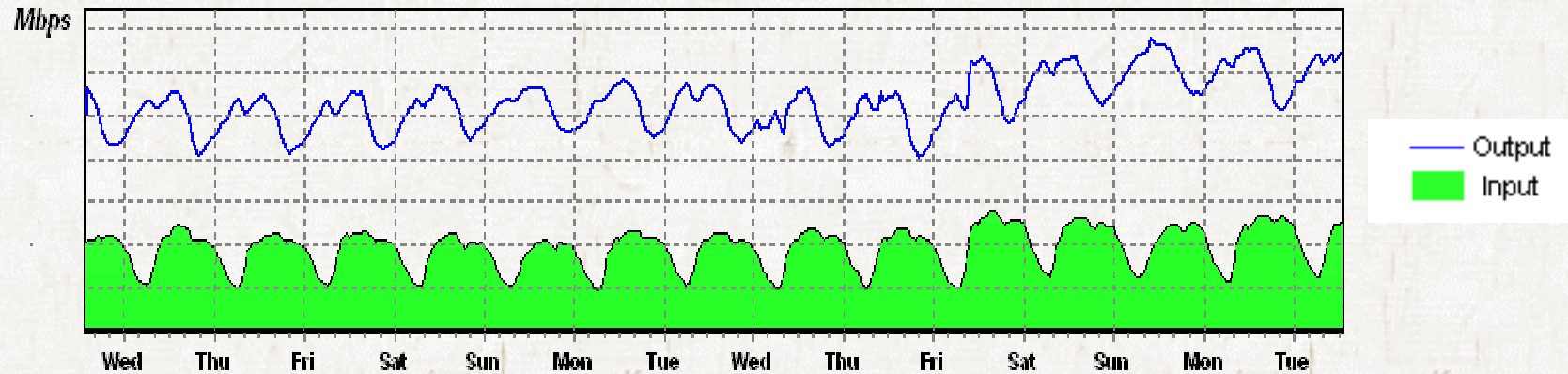❑ KT Domestic Traffic Growth (KT Center nodes ⇔ regional & service nodes)
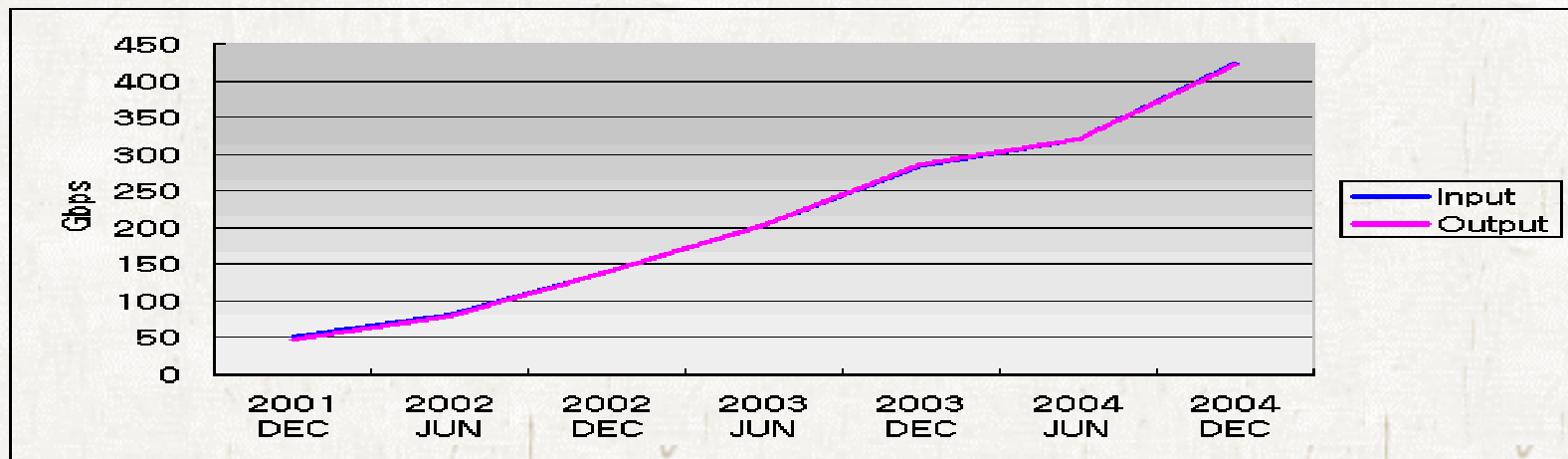
❑ KT Overseas Traffic Growth (KT Global G/W ⇔ Overseas Internet)
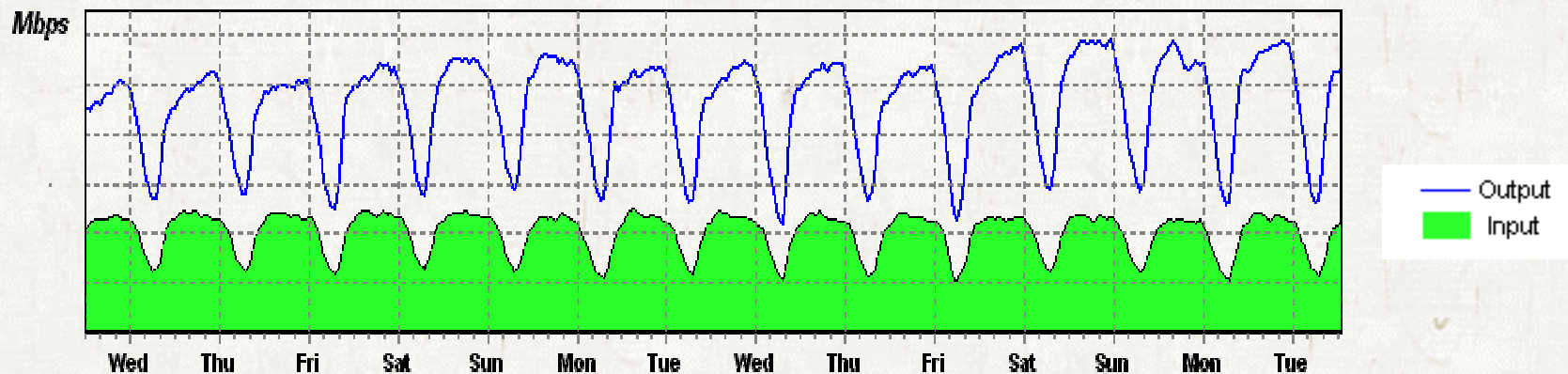
6. KT Traffic Trends(2)

❑ **KT-US Traffic MRTG**

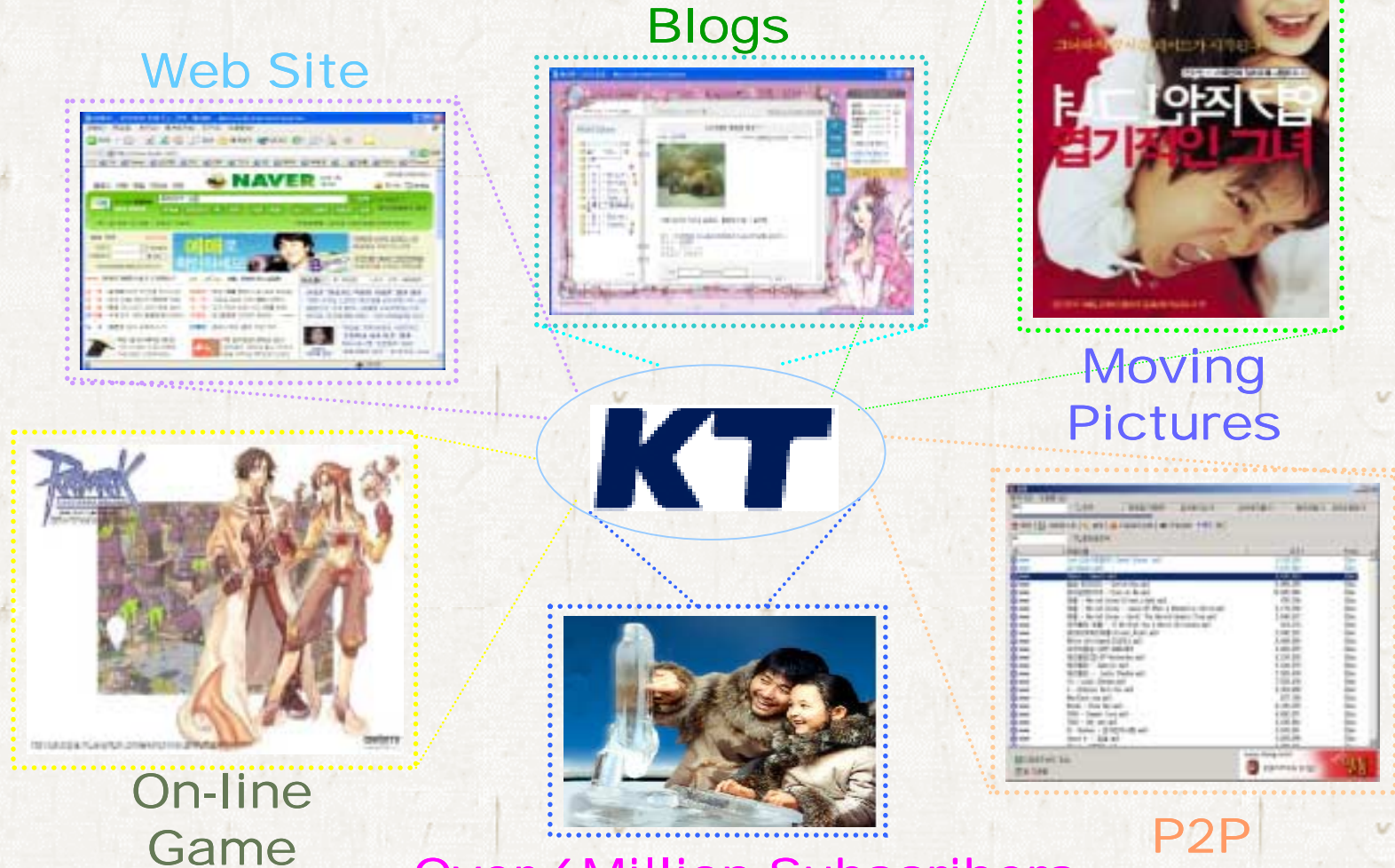(Source: KT Data, JAN 2005)

❑ **KT-Asia Traffic MRTG**

(Source: KT Data, JAN 2005)

6. KT Traffic Trends(3)

❑ Abundant contents and Services

Blogs

Web Site

Moving Pictures

On-line Game

Over 6Million Subscribers
(ADSL/VDSL/Metro Ethernet...)

P2P

7. Asia Internet growth cost Asian ISPs

☐ **Vicious cost circle**

Explosive & continuous traffic growing intra Asia ➡️ Need to Increase international backbone capacity ➡️ High cost is a burden to ISPs sending more traffic

ISPs getting more traffic should buy transit,

ISP sending more traffic cost for detour traffic ⬅️ Make difficult to new or upgrade peering capacity ⬅️

❖ **Asia Internet development imposes high Cost to Asian ISPs**

➢ Asian ISPs highly depend on US Transit backbone
➢ Most Asian ISPs pay for full circuits and connections to US

❖ **High cost disturb direct peering flourishing between Asian ISPs**

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8. Suggestion

❑ Peering Settlement

Peering Settlement is the interconnection relationship between ISPs, in which the cost to establish of the interconnect link is usually share 50:50, and then both ISPs pay charge for the traffic difference between each ISPs

	ISP A	ISP B
①Traffic of A → B	100	
②Traffic of B → A		35
Difference ①-②	65	

"ISP B shall pay to ISP A according to traffic difference, 65"

➢ Negotiation based settlement charge

➢ Charging rate will be measured by value and benefit from peering

9. Obstacles for peering settlement

❑ **No Standard measurement method for Internet traffic**

➢ Not confirmed and no authorized organization yet

❑ **Difficulties for ISP Value Evaluation**

➢ How to decide Settlement rate related with ISP value evaluation

➢ Lack of data and information because of current negotiation based connection

❑ **Hard to manage Internet traffic**

➢ Management for QoS to Guarantee the necessary traffic flow

➢ Screening and/or limiting unessential traffic

❑ **Cost for the settlement traffic measurement system**

➢To measure exact traffic data for settlement

➢ Installation of the traffic measurement system at the beginning

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The end