Broadband Market Potential and Necessity for Security

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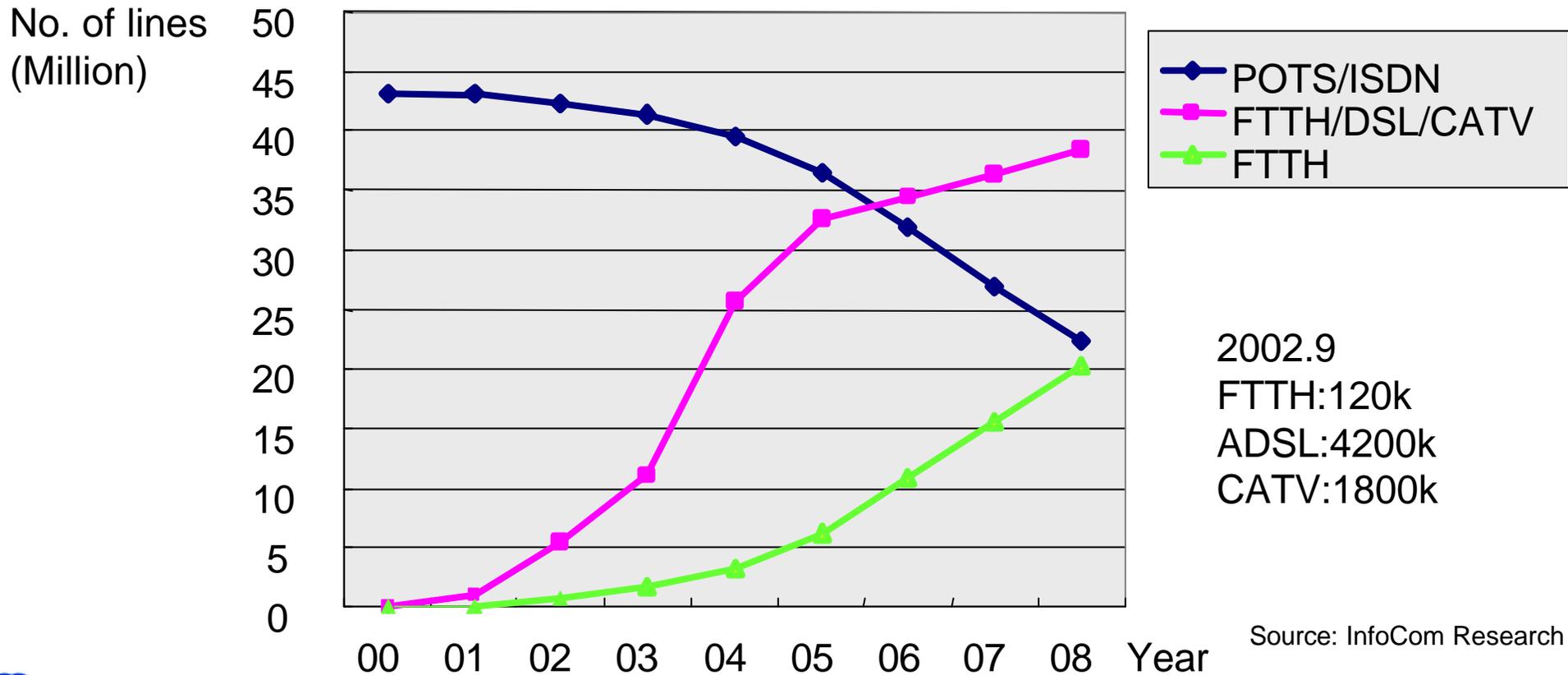**NTT**

FTTH Widely Deployed for

- ## High Speed Internet Access & Transparent LAN Services (TLS) ~10Mb/s

  - *Shared PON*: Leverage Narrow band-PON with dynamic bandwidth allocation (DBA)

- ## ATM Leased Line and High Speed Internet Access Services ~150Mb/s(600Mb/s)

  - *APON, BPON*: Compliant with G.983.1

- ## P2P TLS ~ 1Gb/s & High Speed Internet Access Services ~100Mb/s

  - *P2P* : Two fibers and Single fiber (TS-1000)
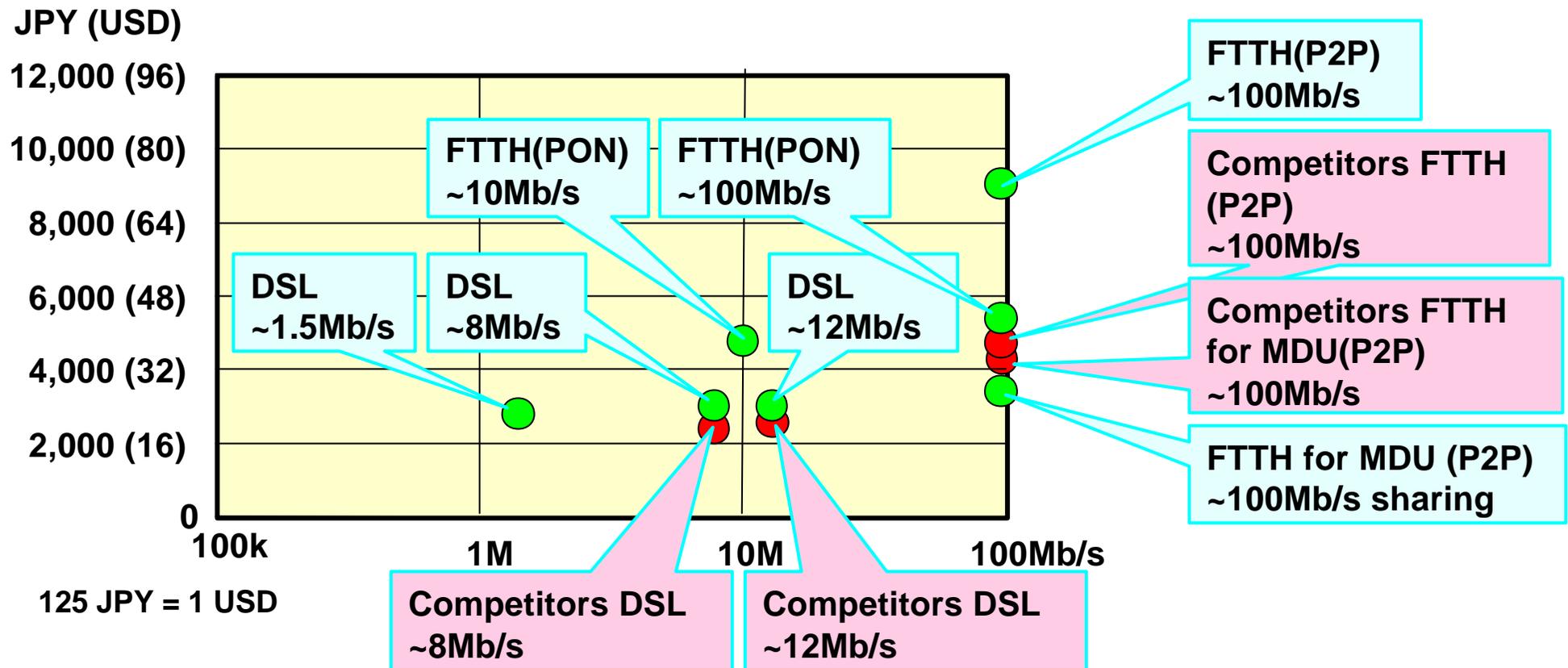
Broad Band Market in Japan

DSL explosively increases in 2~3 years
FTTH are also following this trend.

No. of lines
(Million)

Legend:
- POTS/ISDN
- FTTH/DSL/CATV
- FTTH

2002.9
FTTH:120k
ADSL:4200k
CATV:1800k

Source: InfoCom Research Inc.

What happens in Japan

Heavy competition in BB Internet Access market

JPY (USD)

- 12,000 (96)
- 10,000 (80)
- 8,000 (64)
- 6,000 (48)
- 4,000 (32)
- 2,000 (16)
- 0

100k   1M   10M   100Mb/s

125 JPY = 1 USD

FTTH(PON) ~10Mb/s

FTTH(PON) ~100Mb/s

DSL ~1.5Mb/s

DSL ~8Mb/s

DSL ~12Mb/s

FTTH(P2P) ~100Mb/s

Competitors FTTH (P2P) ~100Mb/s

Competitors FTTH for MDU(P2P) ~100Mb/s

FTTH for MDU (P2P) ~100Mb/s sharing
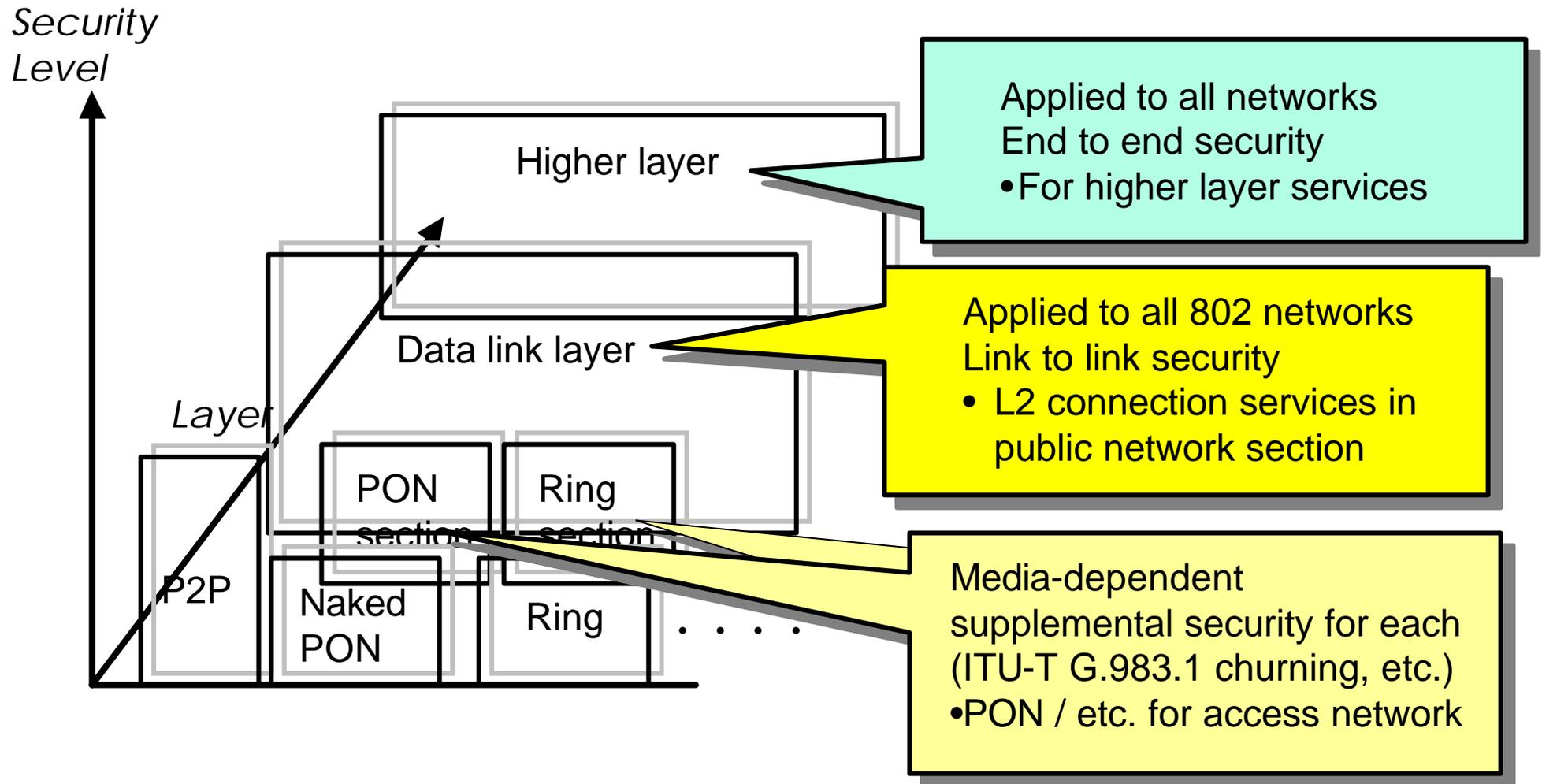
Competitors DSL ~8Mb/s

Competitors DSL ~12Mb/s

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Why Security

- ## Wide deployments of broadband access
  - Current technologies allow us to deploy BB access network easily, but…without security mechanism….
    - The most major service is just "best-effort high-speed access for data".

- ## Broadband access is not special one any more
  - As infrastructures, not extension of enterprise network
    - Not only for cheap Internet access, but also for all services including conventional leased line, voice, etc and wide variety of new services over L2.

Which Layer?

Security Level

Higher layer

Data link layer

Layer

PON section

Ring section

P2P

Naked PON

Ring

Applied to all networks
End to end security
• For higher layer services

Applied to all 802 networks
Link to link security
• L2 connection services in public network section

Media-dependent supplemental security for each (ITU-T G.983.1 churning, etc.)
• PON / etc. for access network

New Security will support

- ## Common mechanism
  - Interoperability and multi-vendor operation bring many merits to both customers and operators.

- ## Media-independent mechanism
  - One media-independent mechanism, which applies to various infrastructures (802 networks) in public networks, would be the most efficient approach.

Operators requirements;

http://grouper.ieee.org/groups/802/3/efm/public/sep02/sec/FordMccammon_sec_1_0902.pdf