Logical Port Availability from Carrier's Viewpoint

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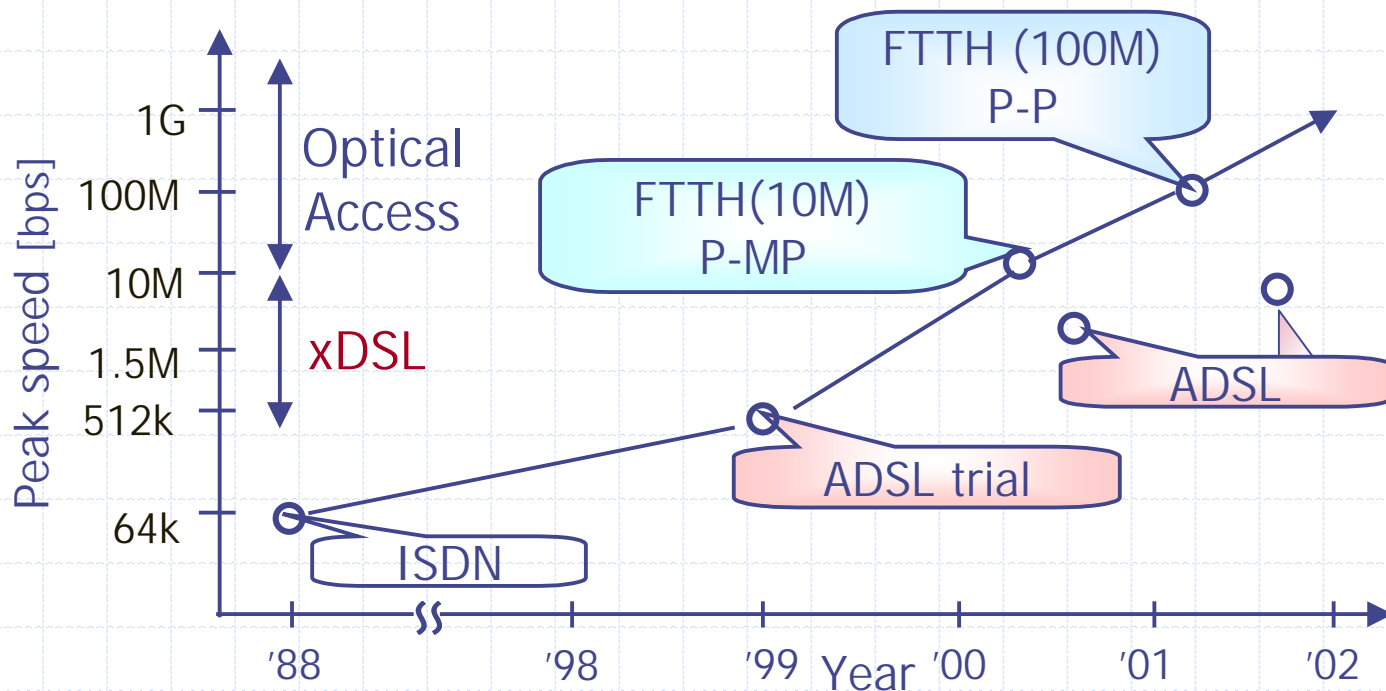
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BB Access Services in NTT

■ Broadband access services with low tariff available in Japan.
- ● Internet access and Inter-LAN connection services

Non-Flexible Issues of Existing Services

- ◆ Restrict customers to use VLAN
  - ■ Segregate user traffic by using VLAN on P-MP for security reason
  - ■ Single ONU cannot accommodate multiple users

- ◆ Not support multiple grades of services
  - ■ Single ONU cannot accommodate multiple grades of services

Logical Port Availability

◆ Achieving flexibility

- User traffic segregation without VLAN
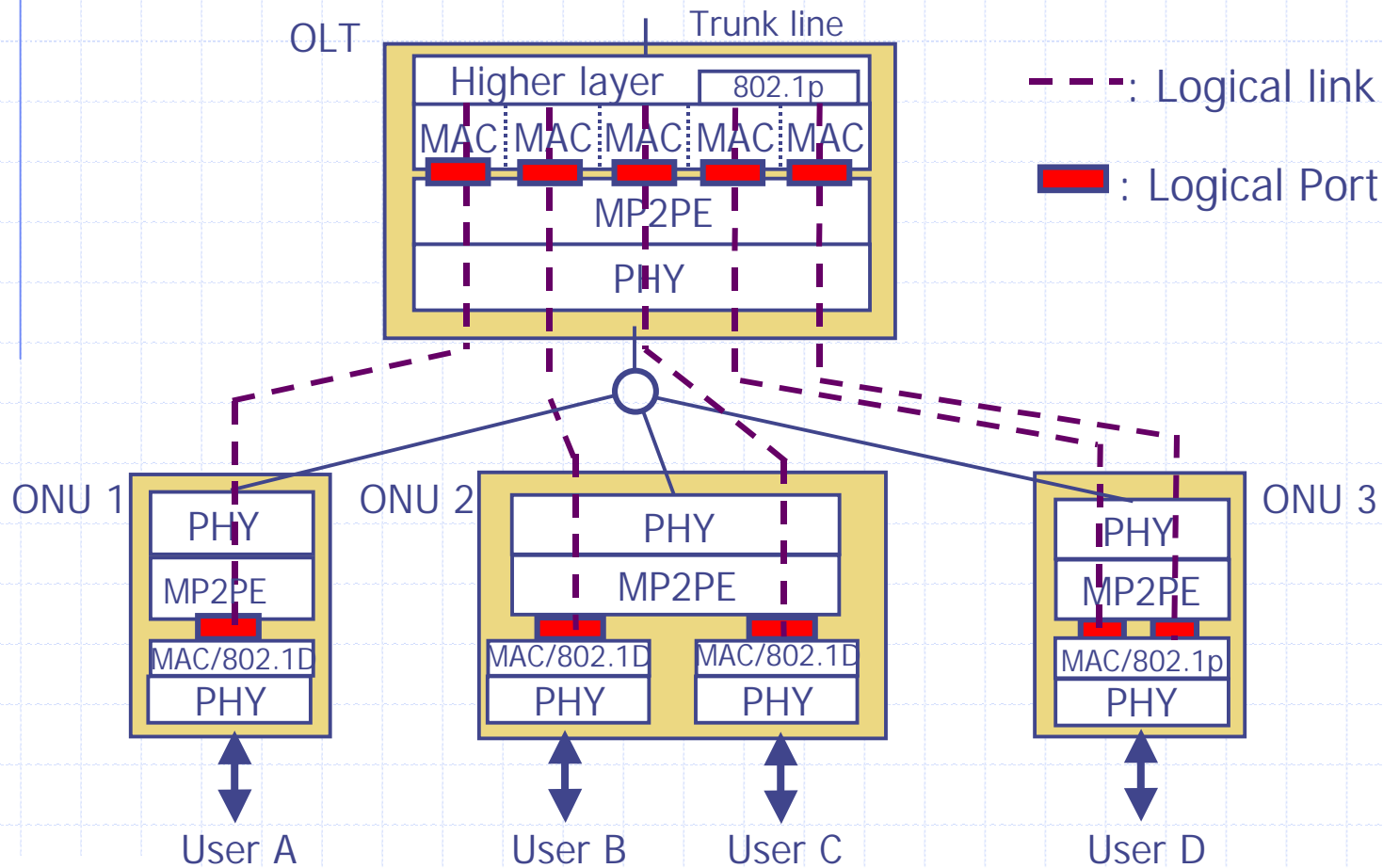- Accommodate multiple users and multiple services

"Logical port", which is independent of ONU physical port, enables us to provide flexible services

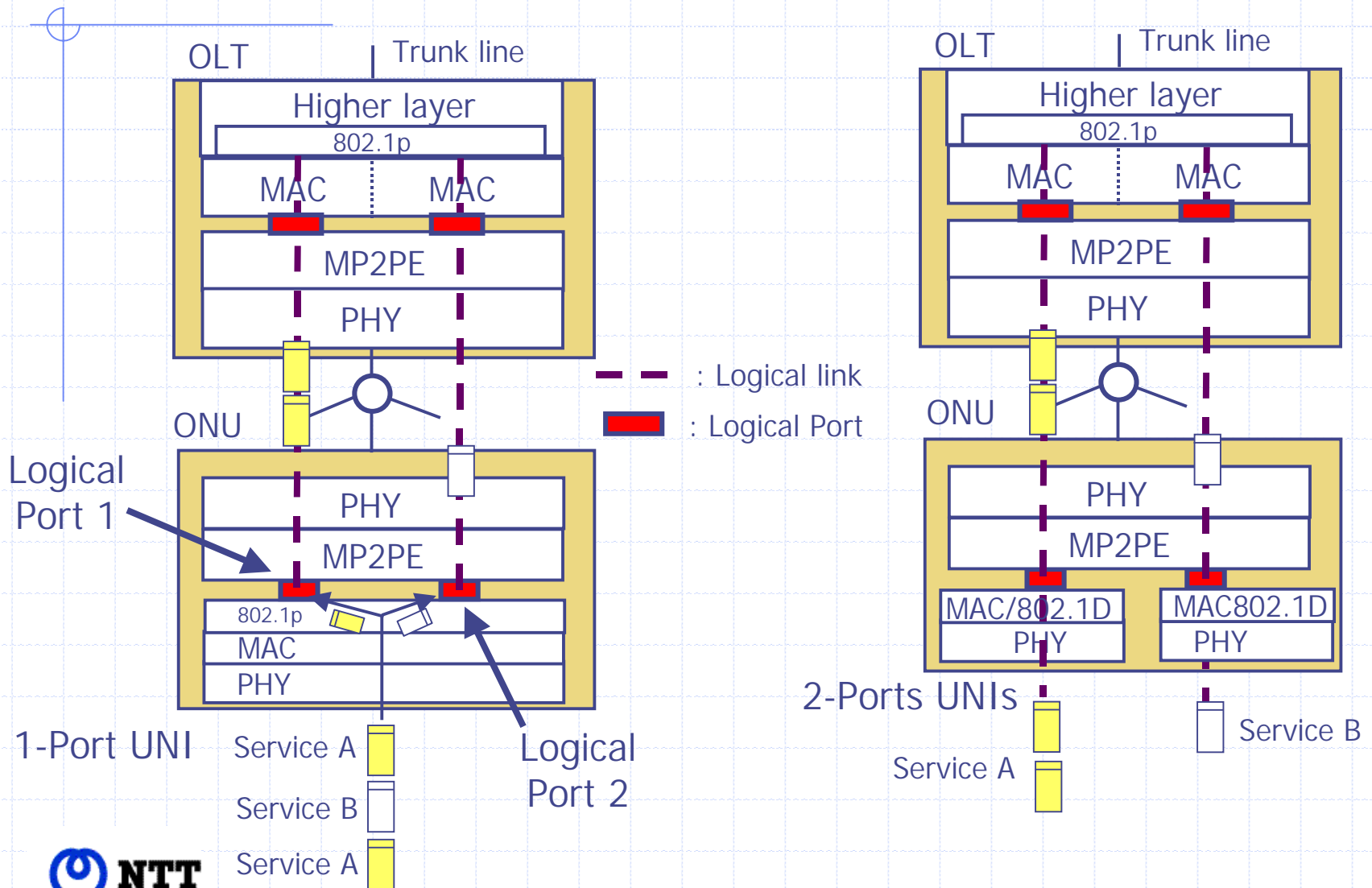"Logical PHY ID" for P2PE: proposed by Hiroshi Suzuki   Cisco Systems

"EPON Compatibility with Peer-Peer,802.1D Bridging,Pause Operation and Link Aggregation", July 2001
"EPON P2P Emulation Detail Behaviors",Oct 2001

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User traffic segregation by logical ports

Service Classification by logical ports

OLT | Trunk line

Higher layer
802.1p
MAC   MAC
MP2PE
PHY

ONU

Logical
Port 1

PHY
MP2PE
802.1p
MAC
PHY

1-Port UNI   Service A

Logical
Port 2

Service B

Service A

- - - : Logical link

▬ : Logical Port

OLT | Trunk line

Higher layer
802.1p
MAC   MAC
MP2PE
PHY

ONU

PHY
MP2PE
MAC/802.1D   MAC802.1D
PHY   PHY

2-Ports UNIs   Service B

Service A

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Conclusion

Logical Port allows us;

- **User traffic segregation**
  - Without VLAN
  - Single ONU can accommodate multiple users

- **Service classification**
  - Single ONU can support multiple grades of services
  - Single physical port supports multiple grades of services