10GE-PON 5 Criteria: Economic Feasibility

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Economic Feasibility

The proposed project shall show:

(a) Known cost factors, reliable data.
(b) Reasonable cost for performance.
(c) Consideration of installation costs.

- The cost factors for the components and systems are well known because 10Gb/s Ethernet and EPON architectures are massively deployed for commercial services.

- Point-to-multipoint topology is optimal for broadcast services and IP-based TV, providing cost-efficient subscriber access architecture. Coupled with a reduction of the footprint and power consumption of CO equipment, reduction of trunk fiber count, and lower maintenance and repair costs, the introduction of 10Gb/s EPON results in the overall reduction of infrastructure cost and reasonable cost for performance ratio.

- The installation costs of cable plant and maintenance costs are identical to 1Gb/s EPON.

(a) Known cost factors, reliable data

- Ethernet is a cost-effective solution at a high-speed of 10Gb/s.
- 10GbE and 1Gb/s EPON systems are commercially deployed, and the cost factors for the components and systems are well known.
- There is a learning curve associated with the cost and volume:
  - The cost would decrease by 30% when the volume is doubled,
  - In other words, the cost would decrease about 70% when the volume increases by a factor of 10.

(b) Reasonable cost for performance

- Large bandwidth of 10G/s EPON can be shared by a lot of subscribers, which results in the reduction of infrastructure cost.
- PON topology is suitable for providing broadcasting services, and IP-based TV driving the current broadband market can be cost-effectively delivered to a lot of subscribers.
- IP-based network convergence is a next-generation system trend, and by accommodating multiple services besides FTTx with 10Gb/s EPON system, the following merits are expected:
  - Reduction of the footprint and power consumption of CO equipment,
  - Reduction of trunk fiber count,
  - Reduction of maintenance and repair costs.

(c) Consideration of installation costs

- In terms of ODN, the installation cost of 10Gb/s EPON is the same as that of 1Gb/s EPON.
- If the ODN for 10Gb/s EPON is identical to 1Gb/s EPON, no cable plant installation cost is associated with upgrading the system.

Motion

Approve response to Economic Feasibility Criteria as shown in 5crit_econ_1_0506.pdf on page 2.

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Seconded:

Y:

N:

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