

Problem Statement

An operator would like to develop a focused **short-term greenfield expansion plan** with an understanding of short-term and longer-term cost trade-offs. Currently, XGS-PON is more expensive than GPON. Should they initially execute their expansion plan with GPON or XGS-PON?

High Level Assumptions

The following network topology and cost assumptions are used for this use case:

- Network is made up of with 1 facility to cover 50K HHP
- All nodes are built within 2 years (@25K HHP/Year)
- Greenfield take rate to grow Y1 10%, Y2 30%, Y3 50%
- Morphologies assumed - 70% SFU, 20% MDU and 10% Biz
- Growth Rates: 40% downstream / 30% upstream
- PON transformation path GPON → XGS-PON → NGPON2
- PON loaded cost assumptions - \$1K per GPON port, \$10K per XGS PON port (reduces to GPON costs by approx. year 5)
- XGS ONT cost reduces from \$300 to \$100 by year 3

Go directly to XGS or grow organic?



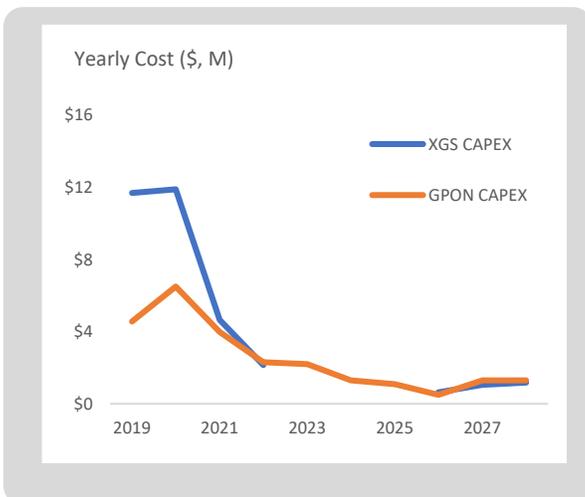
Q: Build 10/10G PON now (or) build 2.5/1.25 PON now and 10/10 when needed?

Brief Description of the Problem and Jibe Approach

Both XGSPON (10/10G) and GPON (2.5/1.25G) technologies are available for the operators now. But XGSPON optics and the line cards are expensive at present, due to low volume. An operator is deciding, for a Greenfield deployment, based on the cost, capability and operational impact points of view, which path should they take? Go directly to XGSPON and bear the costs now or migrate organically with the upgrades from GPON to XGSPON to later technologies as needed.

We perform this situation analysis to assist the operator with a sample greenfield topology as specified in the assumptions. An analysis is conducted using Jibe to provide -

- The short-term CapEx and Operational (activities, construction, material) needs for both the cases
- Compared them over a 10-year quarterly plan for cost and operational risks



Results and Conclusions

Caution: These results are based on our high-level assumptions for illustrative purposes only. Actual results may vary based on each operator's environment.

These two scenarios provide very detailed output in AP-Jibe. We highlighted the yearly upgrade CapEx costs over 10 years. Some of the decisions that can be derived from such analysis include -

- Should the operator go for XGSPON now or later, if so when?
- (Not in the graph) How does the capacity tracks the demand?
- Which is higher NPV (higher near-term investment)?
- How often are the upgrades done over 10-year period?

Such analysis using AP-Jibe can be used by operator for their network element level decisions, or even can use to develop short

term guidelines with longer term vision.

For more information on this application note contact us at contact@fpinno.com or +1-919-444-2270