Use of Subscriber Single Channel Carrier

to Defer Feeder Relief Project

Case Study

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1. The problem

The demand growth of a small village is λ = 15 subs/year. The village is 4 km from the exchange. The existing cables are completely used up.

Alternatives available to add facilities are either to place a buried cable of sufficient capacity or to install a single channel carrier.

The problem is to determine the optimal policy to cater for the future demand.

2. Input data

2.1 *Cables*

- Basic purchasing cost *100 MU / km*
- Incremental purchasing cost *6.5 MU / pair / km*
- Digging and placement cost *650 MU / km*
- Service life 35 years
- Operating and maintenance cost 2.5 %
- Scrap value 0

2.2 *Single channel carrier*

- Purchasing cost *30 MU / piece*
- Installation cost *10 MU / piece*
- Service life 15 years
- Maintenance and operating cost 5 %
- Scrap value 0
- Interest rate 10 %