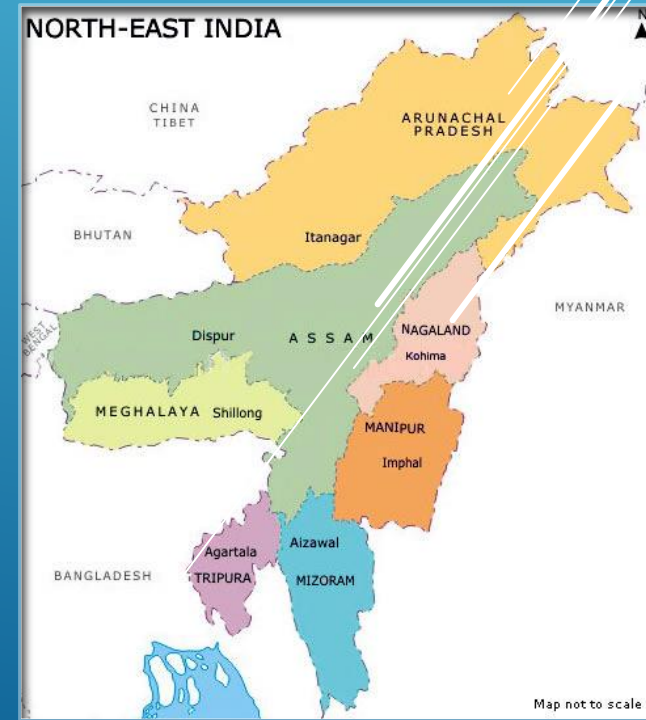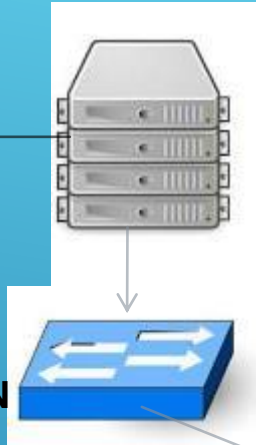# FTTH TECHNOLOGY
for ISP's in India

Shailendra Singh
Founder & CEO
Shaildhar Telecom Services Pvt. Ltd.

AGENDA

- ▶ **FTTH Architecture For Broadband**

- ▶ **LCO's Evolution To FTTH/ EDFA**

- ▶ **Operational Challenges**

- ▶ **Smart Home – FTTH Use Case**
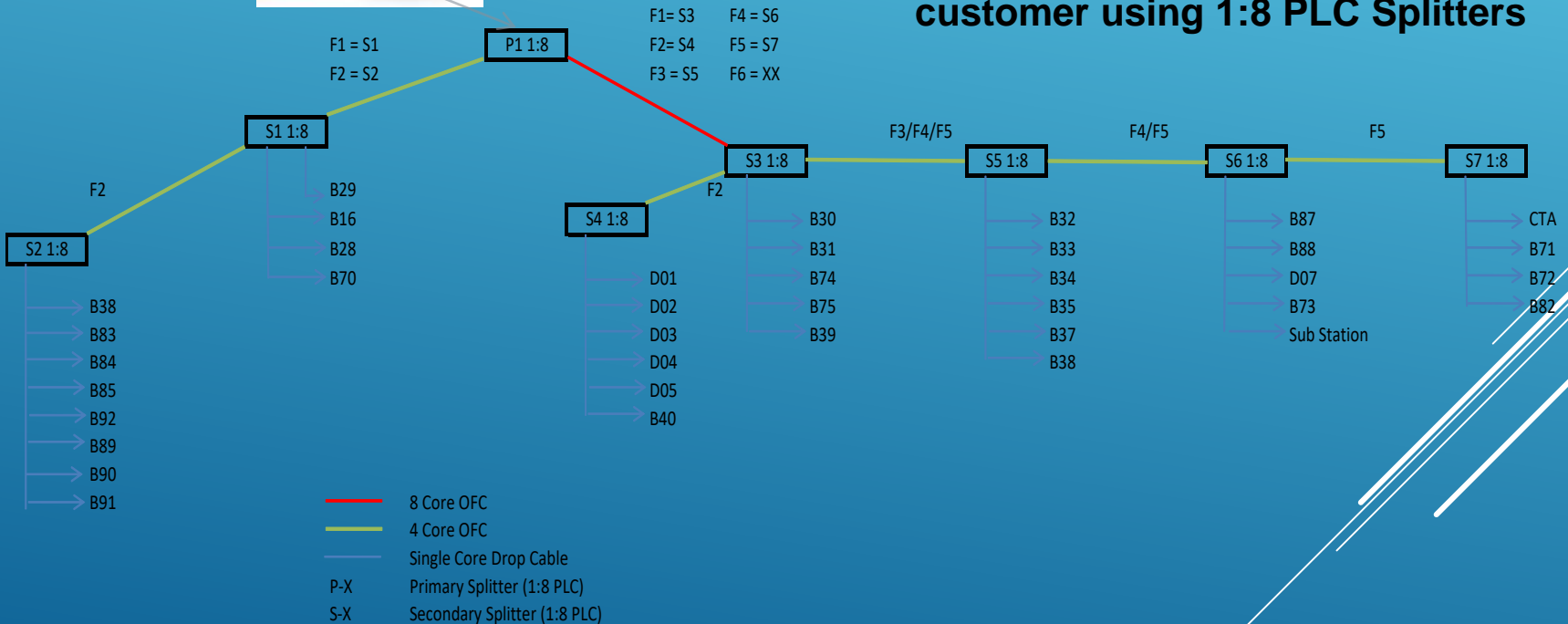
- ▶ **Shaildhar Telecom Profile**

Network Topology   - Access Network on FTTH

Proxy AAA

To Core Switch
(Slide 2)

GPON or GEPON

A typical access network connecting customer using 1:8 PLC Splitters

F1= S3   F4 = S6
F2= S4   F5 = S7
F3 = S5   F6 = XX

F1 = S1
F2 = S2

P1 1:8

S1 1:8

F3/F4/F5

F4/F5

F5

S3 1:8

S5 1:8

S6 1:8

S7 1:8

F2

B29
B16
B28
B70

S4 1:8

F2

B30
B31
B74
B75
B39

B32
B33
B34
B35
B37
B38

B87
B88
D07
B73
Sub Station

CTA
B71
B72
B82

S2 1:8

B38
B83
B84
B85
B92
B89
B90
B91

D01
D02
D03
D04
D05
B40

───── 8 Core OFC
───── 4 Core OFC
───── Single Core Drop Cable
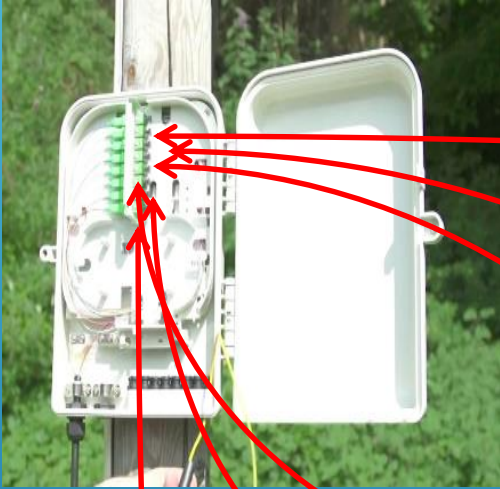P-X   Primary Splitter (1:8 PLC)
S-X   Secondary Splitter (1:8 PLC)

Network Topology   - Access Network on FTTH
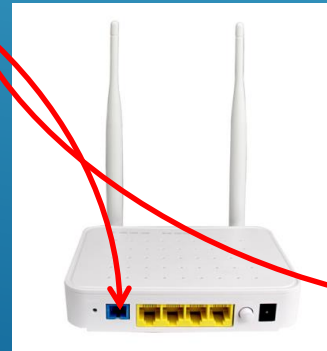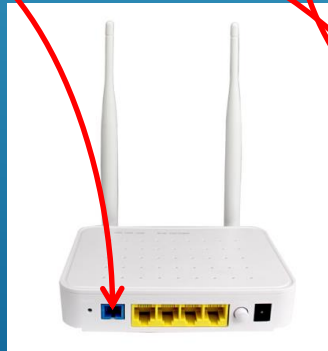**Topology for Home / SME connection where NAS / Gateway Router acts as Gateway**

SHAILDHAR
telecom services

Distribution Box with OFC Splitter

Customer home
ONU with WiFi

Network Topology   - Access Network on FTTH
Customer connectivity from Roadside Distribution Box using OFC drop Wires

- Traditional Cable Operators use Power Amplifiers – For FTTH they need to Optimize their network – This calls for a major Education of the LCO's

- Cable Operators need to migrate to a cleaner network with Passive Splitters

- Cable TV operators are slowly but surely adopting EDFA to improve their productivity

LCO'S EVOLUTION TO FTTH/ EDFA

▶ Aerial Fiber is the best option – Mostly hosted on Electricity Towers – However different Electricity boards have different views and Commercials on the same – **No help from DoT on this**

- ▶ This is the biggest challenge for an ISP

- ▶ Leads to downtime as well since Electrical Networks are constantly being upgraded

- ▶ Better interaction is required between DoT/ Municipal Corporation and Electricity Board for a smoother operation for ISP's

OPERATIONAL CHALLENGES

- Redundancy is a challenge – We are creating new models for the same

- Centralized Versus Distributed Network

- Availability of Manpower – Except for Assam and Manipur Technical Manpower is a challenge in the North East

OPERATIONAL CHALLENGES
(CONTD.)

- WiFi Based Security Cameras

- WiFi Based Electronic Locks/ Video Door Bell

- Zigbee Gateway based Smart Home Solutions

  - Smart Plug

  - Door/ Window sensor

  - Gas Sensor

  - Smoke Sensor

SMART HOME – FTTH use case

SHAILDHAR PROFILE

➢Shaildhar was Founded in 2009 as a Services company
➢For the first 5 years we executed turn-key projects:
     ➢Optical transmission
     ➢Micro-wave transmission
     ➢Wi-max and Wi-Fi
     in such diverse markets as Bhutan, Sri Lanka and Maldives
➢Since 2015 we have been running Broadband Services
     ➢Managed Service Partner for Railtel Railwire across North East
     ➢Since 2017 we have been running our own Broadband services
     across Meghalaya, Mizoram and now Arunachal
     ➢Offices in Shillong, Guwahati and Aizawl