



# **Broadband Technologies** —— and —— **Symmetrical Speeds**

## Symmetrical Versus Asymmetrical

Symmetrical broadband connections have equal download and upload speeds.

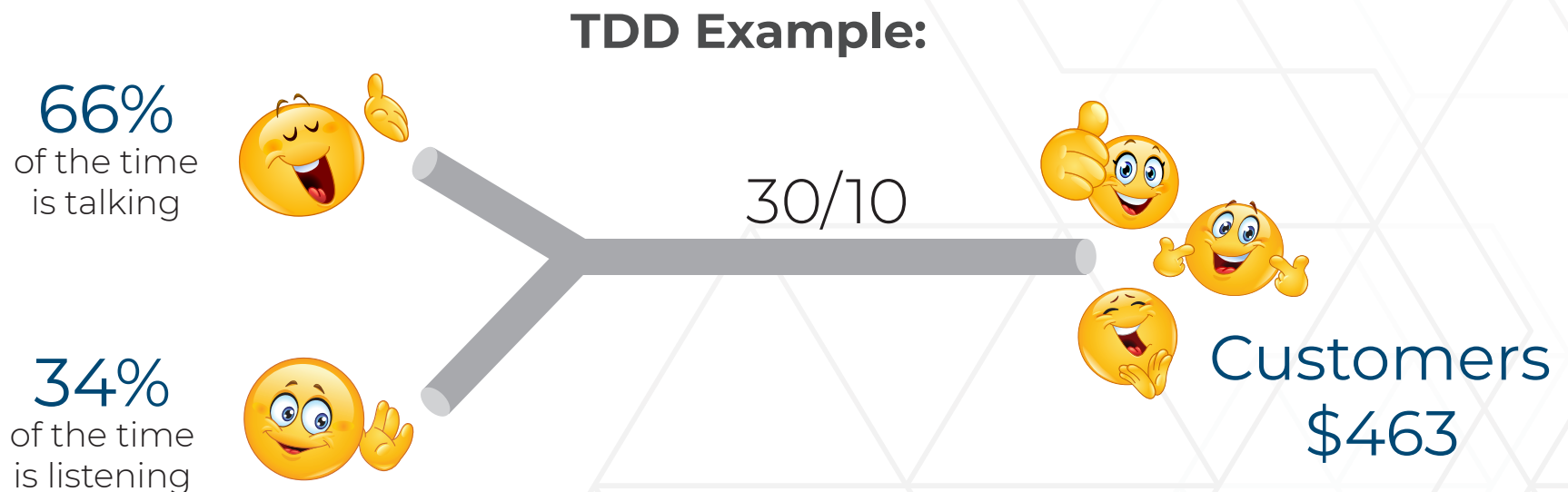
**Example:** 100/100 Mbps

Asymmetrical broadband connections do not have equal download and upload speeds.

**Example:** 25/3 Mbps

## Wireless

### Time Division Duplex (TDD) & Frequency Division Duplex (FDD)



# BROADBAND TECHNOLOGIES AND SYMMETRICAL SPEEDS

## xDSL

**VDSL2**

24-gauge copper cable pair @ 2,000 feet



**50x50 Mbps** (Symmetrical Possible)

**ADSL2+**

24-gauge copper cable pair @ 2,000 feet



**24x1 Mbps** (Lab)

**ADSL2+**

24-gauge copper cable pair @ 5,000 feet



**13x0.4 Mbps** (Real World)

**Bonded**

Two 24-gauge copper cable pairs @ 2,000 feet



**48x2 Mbps** (Lab)

**Bonded**

Two 24-gauge copper cable pairs @ 5,000 feet

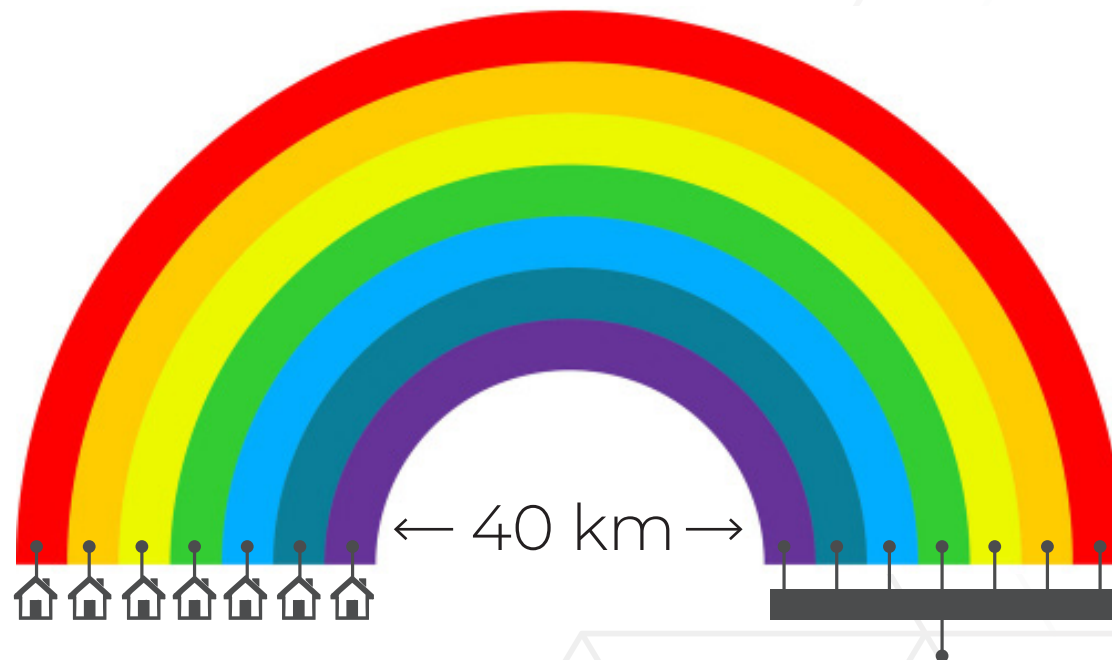


**15x0.6 Mbps** (Real World)

**\$178**

# Fiber Optic Broadband

**Active Optical Network (AON)**  
**Passive Optical Network (PON)**



XGS-PON | 10 Gbps x 10 Gbps | \$300-\$400 | 32 Way Split

Questions ?

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