



NATIONAL BROADBAND PLAN

Technology: Fixed Broadband Workshop | Calix Perspectives

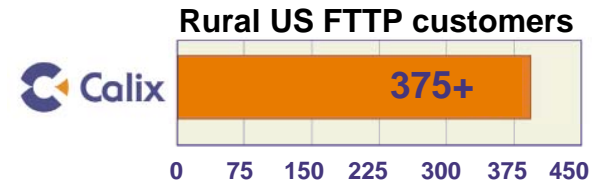
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Who is Calix?

- ◀ The **LEADER** in rural access infrastructure
 - ▶ **40%** of US service providers rely on Calix access platforms for broadband service delivery

Broadband technologies/services deployed by Calix customers

- ◀ Technologies
 - ▶ DSL, PON, gigabit Ethernet, 10 gigabit Ethernet, SONET
- ◀ Services
 - ▶ Data (768Kbps → 1Gbps), IPTV, RF video overlay, VOIP, distance learning, telemedicine



What is Calix seeing in the US rural markets?

- ◀ Fiber to the Premises (FTTP) has emerged as the “**PREFERRED**” technology for business and residential services
 - ▶ **Economics:** Increasingly attractive (sub-\$800/home passed, sub-\$2000 all-in/ home served)
 - ▶ **Deployments:** Calix has 375+ US service providers deploying FTTP in rural/urban markets
 - ▶ **Subscriber adoption rates:** Strong (50%+ in most FTTP deployments)
 - ▶ **FTTP services enabled:** Residential (1 Mbps to 100 Mbps), Business (T1s to gigabit Ethernet)
 - ▶ **Hot FTTP applications:** Mobile backhaul, IPTV, cable RFOG, business Ethernet

Where is the US rural market going?

- ▶ The rapid emergence of an **ALL VIDEO** world
 - ▶ *Broadband driven: textual → graphical → video*
 - ▶ *Video = Rich, interactive content shared across devices*
- ▶ Average annual US bandwidth increase = **70%**
 - ▶ *Today=5 Mbps → 5 yrs=100 Mbps → 10 yrs=1 Gbps*

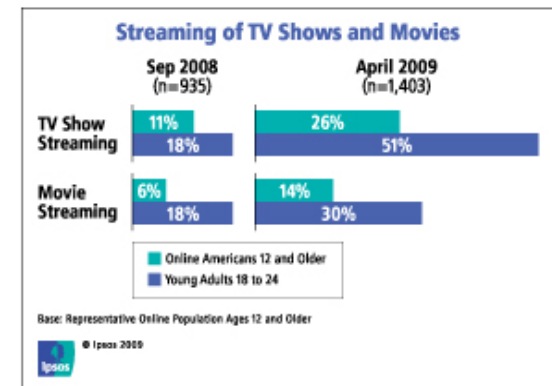
Policy implications?

- ▶ Access infrastructure a **GENERATIONAL** investment with long lifecycle – look to the future
 - ▶ *Incremental improvements inefficient, miss the mark*
- ▶ An “all video” world **REQUIRES FIBER**
 - ▶ **Speed** (*symmetry, low latency*)
 - ▶ **Flexibility** (*efficiency, openness, complementary to mobile*)
- ▶ Stimuli: Tax breaks, grants/loans, cost recovery
 - ▶ *Data point: 100% of Calix Stimulus support letters → FTTP*

Ubiquitous Video → Entertainment, Education, Communication



Last 6 months → Video streaming doubled





Calix

ACCESS INNOVATION