Business Model Options for Broadband Deployment

NTIA Webinar Series

You must dial in to hear the webinar!
Conference Line: 800-593-7190 Passcode: 984-4951#

June 21, 2017
Participants

Moderator
• Sandeep Taxali – Senior Specialist for Broadband Development, Broadband USA, NTIA, U.S. Department of Commerce

Presenters
• Tim Scott – Director of Fiber Infrastructure, City of Centennial
• Elliot Noss – CEO, Ting Networks
• Brad Moline – President, ALLO Communications
• Brett C. Hill – CEO, FTS Fiber Networks
Range of broadband business models that involve public-private collaboration

<table>
<thead>
<tr>
<th>Key Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>• External and internal factors that led to the chosen business model</td>
</tr>
<tr>
<td>• Successes and challenges encountered through the planning, deployment, and operation phases</td>
</tr>
<tr>
<td>• Lessons learned and best practices that can be applied to your community</td>
</tr>
</tbody>
</table>
Defining “Business Model” for Broadband

- Involves the set of choices with regard to technology, network, market, services, and funding.

<table>
<thead>
<tr>
<th>Technology &amp; Network Design</th>
<th>Market &amp; Services</th>
<th>Financial</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Technology</td>
<td>• Market</td>
<td>• Funding Sources</td>
</tr>
<tr>
<td>✓ Wireless, wireline, hybrid</td>
<td>✓ Household, enterprise, community institution</td>
<td>✓ Private capital: Equity, debt, internal funding</td>
</tr>
<tr>
<td>• Network Scope</td>
<td>• Last-mile Services Approach</td>
<td>✓ Government assistance: Subsidy, loans, tax credits, etc.</td>
</tr>
<tr>
<td>✓ Last-mile, middle-mile, integrated</td>
<td>✓ Retail vs. wholesale (carrier’s carrier)</td>
<td>✓ Upfront payment by target customers</td>
</tr>
<tr>
<td>• Geographic Span</td>
<td>✓ Services: Broadband, voice, video</td>
<td>• Financial Evaluation Criteria</td>
</tr>
<tr>
<td>✓ Single community, multiple communities, statewide, national</td>
<td>✓ Wholesale Services</td>
<td>✓ Rate of return requirements</td>
</tr>
<tr>
<td>• Deployment Approach</td>
<td>✓ Backhaul, IP transit, etc.</td>
<td>✓ Time horizon (e.g., payback requirements)</td>
</tr>
<tr>
<td>✓ New build, upgrades, leases (e.g., IRU), combination</td>
<td>✓ Lit services, dark fiber, both</td>
<td></td>
</tr>
</tbody>
</table>
Public Private Partnership Approaches

- Business models may involve varying degrees of collaboration between private firms and local government, especially for unserved/underserved areas.

**Examples**

<table>
<thead>
<tr>
<th>Public-Owned/ Private Enabled</th>
<th>Private-Owned/ Public Supported</th>
<th>Joint Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Deployment/Operations</strong></td>
<td><strong>Planning</strong></td>
<td><strong>Market Basis (example)</strong></td>
</tr>
<tr>
<td>• Private sector designs/builds; public entity operates</td>
<td>• Public entity facilitates access to RoW, conduit, poles, easements, etc.</td>
<td>• Joint capacity sharing with public entity serving community institutions and private entity serving business and residents</td>
</tr>
<tr>
<td>• Private sector designs, builds, operates (DBO)</td>
<td><strong>Capital Assistance</strong></td>
<td><strong>Network Basis (example)</strong></td>
</tr>
<tr>
<td><strong>Revenue Model</strong></td>
<td>• Public entity provides financial (e.g., subsidy, loans, etc.) or assets (e.g., conduit, fiber, etc.)</td>
<td>• Public entity owns middle-mile and private entity owns laterals</td>
</tr>
<tr>
<td>• Exclusive contract to ISP (reward/risk sharing)</td>
<td><strong>Revenue Support</strong></td>
<td></td>
</tr>
<tr>
<td>• Open access network (any ISP can purchase capacity)</td>
<td>• Demand aggregation (e.g., bulk capacity and/or revenue commitment)</td>
<td></td>
</tr>
</tbody>
</table>
Presentations

- **Tim Scott** – Director of Fiber Infrastructure, City of Centennial
- **Elliot Noss** – CEO, Ting Networks
- **Brad Moline** – President, ALLO Communications
- **Brett C. Hill** – CEO, FTS Fiber Networks
About Centennial

- Incorporated February 7, 2001
- Population – 107,201
- Contract model – 66.25 full-time equivalent positions
- ~14 miles wide, southern edge of Denver metro area
Centennial Fiber and Conduit (2013)
Policy Decisions and Steps Taken

• SB 152 ballot question - Placed on November 2013 ballot – passed overwhelmingly (76%)

• Council directed and funded a three-part process:
  – Asset Inventory and Opportunity Analysis (2014/2015)
  – Strategic Planning and Feasibility Study (2015/2016)
  – Development and adoption of Fiber Master Plan (2015/2016)

• Implementation of Fiber Master Plan is underway
Plans and Goals

• Understanding and adoption of the Fiber Master Plan by Council was crucial (3/9/16)

• Education and understanding with the Fiber Steering Committee:
  – Infrastructure - dark fiber, funded as infrastructure
  – Competition important – create the environment
  – “Carrier grade” requires the right specs, access opportunities, testing and documentation
  – City-wide build – core streets, passing as many CAIs, commercial sites and potential residential areas as possible
Fiber Backbone
Moving beyond Planning and Feasibility

- Selection of an experienced design and engineering firm is crucial
- Well written RFP resulted in eight great responses
- We asked for an Owners Project Manager (OPM) and contracted in early July (local knowledge is good but so is carrier experience and understanding local government)
- Final desktop design, collaboratively work on updates and suggestions
- Final design and construction drawings for two central phases released with construction work almost complete
- General Contractor (GC) selected to build the infrastructure, conduit validation, boring, fiber and handhole placement, fiber testing
- OPM manages the GC, quality control, safety, final as-built reviews, field inspections
- Backbone construction 2017 into 2018 / consider lateral extensions
- Demonstrate some early wins!
Lessons learned

- Importance of asset inventory and tracking
- Initial expectation setting
- Clear and consistent policy direction and leadership
- Council updates. Public updates when appropriate
- Set and manage expectations, seek small wins, expect there to be bumps on the road....
- Reference the original plan, set the path and stay on it
- Focus on infrastructure and fiber and making it attractive for adoption
Presentations

- Tim Scott – Director of Fiber Infrastructure, City of Centennial
- Elliot Noss – CEO, Ting Networks
- Brad Moline – President, ALLO Communications
- Brett C. Hill – CEO, FTS Fiber Networks
Overview of Ting’s Partnership Models

- Partnership model with City of Centennial
- Other partnership structures
  - Westminster, MD
  - Charlottesville, VA
  - Holly Springs, NC
  - Sandpoint, ID
Presentations

- Tim Scott – Director of Fiber Infrastructure, City of Centennial
- Elliot Noss – CEO, Ting Networks
- **Brad Moline – President, ALLO Communications**
- Brett C. Hill – CEO, FTS Fiber Networks
Brad Moline
President, ALLO Communications
About ALLO

• Competitive Fiber-to-the Premise Provider since 2005
• 7 Communities – Populations
  • 1,500 to 25,000 (6 markets)
  • 275,000 (1 market)
• Full Service Provider
  • Engineering Design
  • Construction Operations
  • Sales & Marketing
  • Installation
  • Network Operations
  • Back Office Systems
Proven Operations

- **Proven FTTP Design**
  - Current population of 350,000
  - Aerial and underground

- **Proven Technology**
  - Calix, Infinera, OFS

- **Proven Operational Processes**
  - 130+ Customer Operations Staff
  - 25 Network Operations Center Staff
  - OSS/BSS Systems (Scalable)
  - Less than 0.5% monthly churn

- **Proven Product Suite**
  - Broadband, Internet, Video, Telephone, HostedPBX

- **Proven Marketing and Share Program**
  - Majority Market Share
Proven Operations

• **PPP Projects**
  • 6 Markets
    • Right of way, pole attachment, permitting efficiency
    • ALLO funded and operated
  • Lincoln, NE
    • Right of way, pole attachment, permitting efficiency
    • ALLO funded and operated
    • 300 miles of leased conduit
    • Various Smart City and other arrangements

• **ALLO Operates in Other Models**
  • Municipal Owned – ALLO operates (White Label)
  • Municipal Owned – ALLO leases and operates
  • Third Party Owned – ALLO operates
Presentations

- Tim Scott – Director of Fiber Infrastructure, City of Centennial
- Elliot Noss – CEO, Ting Networks
- Brad Moline – President, ALLO Communications
- Brett C. Hill – CEO, FTS Fiber Networks
FTS Fiber’s RFP Response to Kent County

- 3 Phase Approach
- Core network of ~110 miles
- Underground construction to maximize security
- Provide the lowest loss and latency available
- Allow other carriers and service providers access to local businesses and residences, outside of the 54 sites
- Delivered within 2 years
  - Includes redundant laterals from the backbone to all priority sites and redundant optical connections on all sites
Dark Fiber Network Benefits

• **Neutral/Open Access** - all service providers can lease or Indefeasible Right of Use (IRU) our fiber

• **Scalable** - minimal network updates required to increase bandwidth for future demand

• **State-of-the-Art Technology** - lower latency supports more rapid sending and receiving of data

• **Diverse, Secure** - built underground where possible and distinct from the competition to provide maximum security and decreased risk of tampering or outages caused by surrounding environment

• **Long Term Investment** - fiber has a life span ~35+ years.

• **Supports Emerging Technologies** - cellular services (5G), small cell technology, distributed antenna system (DAS), Fiber to the Home, etc.
Market Sectors

- Carriers
- International Subsea Cables
- Data Centers
- Internet Service Providers (ISP)
- Content Providers
- Enterprise
- Counties and Municipalities
- Wireless and Small Cell Technology
- E-Rate (Schools and Libraries)
FTS Fiber’s Long-Haul Network
Kent County’s 54 Anchor Institutions:

• Schools
• Libraries
• Hospitals
• Water Towers
• Community Centers
• Fire Stations
• Police Stations
• Town Offices
• Courthouse
• Public Works
• Visitor Centers
• Maintenance
• Emergency Services
• Humane Society

FTS Fiber’s Middle Mile Network

WWW.GIGCOUNTY.COM
Business Model Webinar

Questions and Comments

• Please type your questions in the chat or Q&A box.

• Slides and Transcript will be posted on the BroadbandUSA website within 7 days after the webinar.

http://www2.ntia.doc.gov/
Thank you for attending.

Tune in for the next Practical Conversations Webinar

How Broadband is Transforming Agriculture

July 19, 2017

2:00 pm EST

Registration is required for each webinar:

[http://www2.ntia.doc.gov/](http://www2.ntia.doc.gov/) under Events