Fiber Networks - Critical Municipal Infrastructure to Support the “New Normal”

Carl Meyerhoefer – Sr. Director Strategic and Solutions Marketing

Carl.Meyerhoefer@calix.com
The Challenge / Opportunity

Internet Access In America

Broadband Availability Throughout Continental U.S.

Broadband defined as minimum 25 megabits per second (mbps) downstream, 3 Mbps upstream.

Communities without access
Communities with access
Unpopulated
WHERE DO YOU STAND ON THE DIGITAL DIVIDE?

Is broadband connectivity in your community keeping pace or will you end up on the wrong side of the Digital Divide?
Over 150 Gigabit Communities
Economic Development Benefits of a Fiber Broadband Network

- Jobs
- Home Values
- Telecommuting
- Telemedicine
- Small Business
- Start-Ups
Applications Drive Bandwidth Demand
Vision - One Converged Fiber Network Infrastructure
Smart City / Smart Grid Applications

“How can I leverage and monetize a fiber network?”
Smart City / Smart Grid Applications

Examples

- Residential/Business Broadband
- Community Wi-Fi
- **5G Wireless**
- Traffic Management
- Lighting Control
- Video Surveillance
- Distributed Energy
- Access Control
- Healthcare
- Parking Management
- Autonomous Cars
Broadband during a Pandemic.

CTC's Role & Responsibility as a Critical Communications Provider in our Communities

Joe Buttweiler, Director of Business Development, CTC
joe@goctc.com
Helping Our Members

- FCC Keep America Connected Pledge
- Service Discounts
- Speed Increases - Doubled
- WiFi Hotspots
- Broadband in a Box
COVID-19 Response to Members

- **Keep America Connected Pledge**
  - Not terminate service to any residential or small business customers because of their inability to pay their bills due to the disruptions caused by the coronavirus pandemic
  - Waive any late fees that any residential or small business customers incur because of their economic circumstances related to the coronavirus pandemic
  - Open its Wi-Fi hotspots to any American who needs them.
COVID-19 Response to Members

- [www.goctc.com/Covid](http://www.goctc.com/Covid) web page
- Free internet upgrades to residential customers
- Nearly 50 WiFi Hotspots throughout service area
Temporary Self Installation Process
Helping Our Community

• Public Schools Mapping
• Generate Local Business Revenues
  • Gift Cards
• Appreciation for Local Critical workers
• Keeping our Community Connected/Engaged - Social Media
Helping the Community

Gift Cards for Employees to spend locally
Thank You, to our Community
Social Media

• Engagement is up 50%
• Posts focusing on “Connecting the Community”
  • We’re here to help
  • Personal posts – CTC Techs, Employees “working from home”
  • Keeping members connected at home – what to watch, technology to try, etc.

CTC Technicians

Smart Lounge Giveaway

Time for another giveaway from our Smart Lounge!
The gadget that’s up for grabs is an Echo Show. Like a smart phone, TV, Alexa device, and stereo wrapped into one, the Show lets you make video calls, control security cameras or other ‘smart home’ devices, watch recipe videos, manage your calendar, and stream movies, TV, music, and books.

What would you use it for? ... See More
Helping Our Employees

- Work from home implementation – March 17
- Network Upgrades
- COVID-19 Crisis Management – Pandemic Planning
- COVID-19 Dashboard
  - Call Volume
  - Broadband Consumption
- Keeping Employees Engaged
  - Productivity
  - Cultural
Daily Monitoring of Calls and Network
Bandwidth Consumption

- **Overall Peak Bandwidth** *Internet served to CTC customers and all other wholesale customers*
  - February **32.0 GBPS**
  - March **41.0 Gbps (28% increase)**

- **CTC Customers Only peak bandwidth**
  - February **22.3 Gbps**
  - March jumped to **26.6 Gbps (19% increase)**

6:00 AM lowest bandwidth consumption
9:00 PM is always our daily peak for consumption.
Partnering with Local & Tribal Government, Utilities and Other Entities
Factors in Determining Structures & Strategy

• Eagerness, Energy and Involvement of Community
• What type of broadband service does the partner want?
• Identify potential project funding sources
• Determine ownership of various assets (may depend on financing used)
• What existing resources can each party bring to the project:
  • Experienced people
  • Infrastructure assets (power poles)
• Geographic location and Number of homes & businesses to be served
  • Can impact the providers financial contribution
• Other strategies...helps get to a previously targeted area
City of Lake Shore Property Owners...

The Lake Shore Broadband Committee is exploring options to expand internet options within the City of Lake Shore. Though many property owners have broadband (fast internet) services through a local cable provider, not all residents have access to these services.

The City is working with CTC to study current internet speeds and usage. Participation in this survey is optional, but data collected may be used to help determine eligibility for State and Federal grants, drive financial projections for future projects, and more clearly identify where broadband access is lacking.

It’s important to get as many people to take this survey as possible, so encourage your neighbors to participate, too.

Please note: you are NOT subscribing to services by completing this survey.

Enter your address below to complete this broadband survey:
We found this address: 4066 CO RD 77 (enter a new address)

Verify that the marker below is the correct location for your address. If not, drag the blue marker to your actual location before continuing.
Check your speed

Please take a speed test to check your current service

I am performing this test at the address I entered on the homepage.

- Yes
- No

Begin Test

<table>
<thead>
<tr>
<th>LATENCY</th>
<th>DOWNLOAD</th>
<th>UPLOAD</th>
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Questions

A group of local community members and the Greenwood Township Board are exploring the option of bringing better internet (fiber optics), TV, and phone systems to Greenwood Township. Are you in support of this effort? *

- Yes, I am in support of this effort
- No, I am not in support of this effort

If you do not support this effort, would you support it if you could get faster, more reliable service at a lower cost than what you pay today?

- Yes
- No

How satisfied are you with the QUALITY / SPEED of your current Internet service? *

- Very satisfied
- Somewhat satisfied
- Somewhat dissatisfied
- Very dissatisfied
- I do not have internet service

What is your current monthly fee for internet service? *

- $0
- $10 - $25
- $26 - $50
- $51 - $125
- $126 - $150
- Over $150

How often does your current internet service go down, leaving you without access to the internet? *

- Multiple times per day
- A few times each week
- Once or twice a month
- Rarely
- Never

How do you use the Internet? (Check all that apply) *
Survey Results

How satisfied are you with the QUALITY / SPEED of your current internet service?

- Very Satisfied: 1
- Somewhat Satisfied: 53
- Satisfied: 49
- Not at all Satisfied: 47
- I do not have internet service: 48
City of Long Prairie

- Incumbent Telephone Company & Cable Company not meeting City needs.
- Applied for Minnesota grant funding.
  - Application challenged by incumbents and subsequently denied funding
- Bonding Process
- Construction Agreement
- Lease Agreement
- Right of First Refusal
- Pop-up BBQ to Sign-up Customers
Jon Radermacher
City Administrator