





Fiber Optics for North Georgia's Future.

Going Gigabit



- Review: What is the North Georgia Network, and what does Gigabit mean?
- What does Gigabit mean to the University?
- What does it mean for the region/state?
- When is it going to affect my business?
- Updates from the Trail

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What is NGN?


- NGN is a **501(c)(12)** cooperative (just like EMCs and rural telephone cooperatives)
- Received \$33.5M in ARRA/BTOP funds to build fiber connectivity in north Georgia, with \$8.8M in-kind & matching locally, including \$2.5M from OneGeorgia (through the **Development Authority of Lumpkin County**)
- Vision is to **bring north Georgia to the right side of the 'digital divide'**






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What is NGN (cont.)

- Focus is **Core 260-mile ring (core fiber loop)**
- Additional middle-mile fiber will connect "anchor" institutions & areas
- Last-mile fiber will serve businesses and some home customers in mostly rural, unserved areas

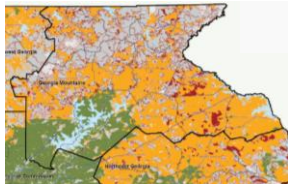







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Why do we need NGN Fiber?

- According to the **Jan. 2011** GTA Broadband Report, 11 of the 13 counties in the Georgia Mountains Reg. are "**unserved**" or "**underserved**" – and over 58,000 people have **no access** to broadband at all
- You can **see** the "digital divide"





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Why Fiber (cont.)?

- Our University was off-line in August due to a fiber cut by AT&T in Clermont for **37 hours, 22 minutes** & a week later, **3 hours, 25 minutes**
- Six months later, Windstream finally secured a different route that does not rely on AT&T (Feb.)
- With NGN added in May, North Georgia College & State University will have **four** total paths of fiber, with over **1Gb of total capacity**

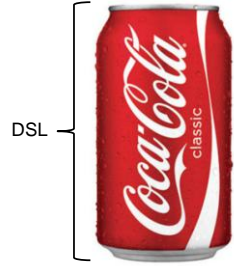



So, What's a "Gigabit"?

- 1Gbps (one gigabit per second) is 1,000Mb (Megabits) – your home DSL likely averages just over 1 Mb (at this speed, video usually stalls or buffers)
- The University uses 400 Mbps daily
- NGN fiber will carry **100Gbps** on day 1
- Capacity of **3.6Tb** (and higher) on demand

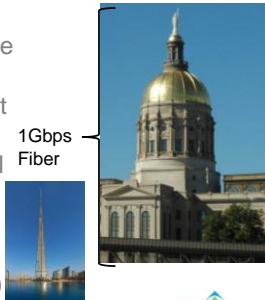
Fiber vs. DSL/Cable

- If we visualize the average DSL connection in our area (around 1.5Mbps) as the height of a can of Coke...



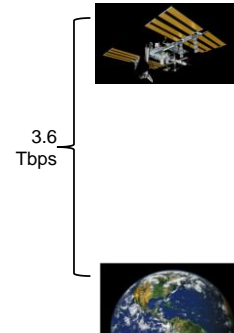
Fiber vs. DSL/Cable

- 1Gbps Fiber (like the University's) would stretch almost 270 ft high (about the height of the Capitol Dome) – NGN will start at 10Gb capacity (2723 ft = tallest bldg in world)



Fiber vs. DSL/Cable

- 3.6 Terabits (NGN Fiber capacity per pair of strands) would span over 180 miles – about the orbit of the International Space Station, or 2.4M cans of Coke high!



A Gigabit in Upload Time:

- A local Doctor's office that needs to upload just 8GB (eight gigabytes) of medical images (3D MRIs, etc.) would take approximately:
- **On Gigabit Fiber: 1 min. 9 sec.**
- **On DSL: 24 hours 51 min. 18 sec. – MORE THAN ONE FULL DAY!!! And, that's IF the connection doesn't drop or stall!**

A Gigabit in Upload Time (cont.):

- A business/home user who wants to back up a single 250GB hard drive off-site would take approximately:
- **On Gigabit Fiber: 35 min. 48 sec.**
- **On DSL: 32 Days 8 hrs. 43 min. – over a month! And that's theoretical, of course, because the connection would stall out long before, so the real answer is NEVER...**

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What does Gigabit mean to the University?

- First, no more downtime!
- Second, North Georgia is planning to apply for membership to the GigU consortium – 37 gigabit-connected universities that provide regional economic development & education services over that connectivity

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- North Georgia would join Georgia Tech as the only two universities in the state to achieve GigU recognition

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What does Gigabit mean to the region?

- Enable schools to offer faster & more robust communications and expand distance learning opportunities
- Support bandwidth-hungry applications such as eCommerce, eGovernment, high definition video, social networking
- Allow businesses to better compete in the global economy
- Industrial/business parks -> GigaParks!

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What does Gigabit mean to the region (cont.)?

- Support more robust healthcare services & even telemedicine
- Provide our citizens with world-class access and connectivity
- Bridge the "digital divide" between broadband haves and have-not's
- Bringing thousands of north Georgia businesses and families to the right side of the digital divide

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What does Gigabit mean to the State?

- The ultra-high-speed fiber in the North Georgia Network just adds to the story that Georgia already has to tell
- Governor Deal: "Georgia is the economic engine of the South." (Jan. 2012)
- NGN is adding to the **economic engine** of the state.
- We're giving businesses **one more reason** to bring jobs to Georgia.

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Who's getting connected?

- Initially: Schools, city and county offices, police, libraries, hospitals, "anchor" businesses & institutions
- Eight K-12 School Systems will have 1GB+ connectivity
- Goal of the Core project is to complete the fiber loop for economic development and job creation – without this loop, none of the rest is possible

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Who's involved?

- **NGN Community Advisory Board**
- Regional education representative: Bryson Payne (chair)
- County representative 1: Tom O'Bryant (White County)
- County representative 2: Mitch Griggs (Union County)
- County representative 3: Senator Steve Gooch (Lumpkin County)**
- County representative 4: Charlie Auvermann (Dawson)
- County representative 5: Bailey Mitchell (Forsyth County)
- State representative: Nancy Cobb, OneGeorgia Authority
- Regional business representative 1: Forrest Graves, JumpinGoat Coffee
- Regional business representative 2: Jim Stewart, UCB
- NGN CEO (ex officio): Bruce Abraham



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When is it going to affect my business?

- The core 260-mile backbone loop will be completed by May 2012
- An additional 800 miles of middle-mile and last-mile fiber will be in place by November 2012 to "anchor" institutions on the fiber path
- We need local ISP partners to provide local business/home connectivity for 2013-2014



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Updates from the Trail, March 2012

- **White County C-POP** went live on Feb 21
- Union and Lumpkin C-POPs: end of April
- Dawson C-POP lighting and Core completion: May
- C-POP: 12'x28', dual A/C, DC batteries, 60 KW generator, dry fire suppression, digital video surveillance, vault doors



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How can I get more info?

- Web site: www.NorthGeorgiaNetwork.com
- Media Contact: Ms. Lee Ann Roy, leeann.roy@connectngn.com
- Community Advisory Board Rep: Sen. Steve Gooch, steve.gooch@lumpkincounty.gov
- Community Advisory Board: Dr. Bryson Payne (Chair), CIO, North Georgia College & State University, bpayne@northgeorgia.edu



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Thank you for your time!

- Questions/Answers
- Copies of the presentation:
Email me at bpayne@northgeorgia.edu ,
Also available online at www.brysonpayne.com

